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MARKETING IN TURBULENT ENVIRONMENTS

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MARKETING IN TURBULENT ENVIRONMENTS

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Dedication

To my father, my mentor and role model, who helped me navigate the ups and downs of this process with his sense of humour and encouragement. To my mother, for always believing in me, and for nurturing me with her unconditional love and support.

To my husband Ram, my source of strength and support, without whose understanding, patience and encouragement, completing this journey would not have been possible.

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Abstract

Marketing in Turbulent Environments

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Increasingly, firms need to develop strategies to cope with unanticipated events and challenges in a rapidly changing external environment. Whether a firm can keep up with a high-velocity, complex market is determined by whether it adopts appropriate marketing strategies. In my dissertation, I examine how firms can effectively use marketing to achieve strong financial performance in the presence of sweeping institutional changes.

In the first essay in my dissertation, I examine incumbent firms' marketing mix responses to turbulence in their environment in the form of liberalization. Many governments are opening up their economies to foreign competition, with the expectation that it will increase economic growth. While foreign competitors with superior technology and management practices pose serious threats to incumbent firms, they also provide them an opportunity to gain new knowledge. In this essay, I explore the following two questions. First, how do incumbent firms, who have thus far operated in a highly protected market, respond to liberalization? Second, how do incumbent firms' responses affect their performance? The findings suggest that incumbent firms' knowledge significantly shapes their marketing mix responses to liberalization and that their performance outcomes are significantly affected by their marketing mix responses.

In the second essay in my dissertation, I examine the effect of environmental turbulence in the form of CSR mandates on firms' performance. While firms' CSR initiatives have been traditionally considered voluntary, in an attempt to achieve inclusive development, some governments are enacting policy to encourage firms to engage in CSR initiatives. Can firms make strategic use of CSR mandates? CSR mandates affect two types of firms – those that were already engaging in CSR spending before the mandate (already-compliers), and those that are doing so for the first time (first-time compliers). The findings suggest that both already-compliers and first-time compliers can increase their shareholder value through their mandated CSR spending by increasing their advertising and research and development (R&D) spending. In addition, while already-compliers can increase their shareholder value through their mandated CSR spending by introducing mechanisms to alleviate agency concerns, first-time compliers can do so by decreasing their promotion spending.

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1.1 INTRODUCTION

In recent years, several governments have liberalized, opening their domestic markets to foreign investment. Some have argued that liberalization of a market stimulates economic growth (Greenaway, Morgan, and Wright 2002). Yet, because of the superior technologies, products, and management practices of foreign firms, managers of incumbent firms worry that liberalization will hurt their firms' performance (Roberts 2008). How do incumbent firms respond to the opening up of their markets through liberalization? In this research, we examine incumbent firms' marketing mix responses to liberalization.

From a theoretical perspective, a significant body of past work has examined firms' responses to competition. Extant marketing literature on foreign competition studying the opening up of markets has examined the entry strategy of grocery retail firms into transition economies following liberalization (Gielens and Dekimpe 2007) and the entry of multinational firms into fast growing emerging markets (Johnson and Tellis 2008). From an incumbent firm perspective, extant research in marketing has examined the effect of new product introductions, short-term marketing attacks, and new domestic firm entry on incumbent firms' marketing responses and performance (Golder and Tellis 1993; Shankar 1999; Steenkamp et al. 2005; Ailawadi et al. 2010, Mukherji et al. 2011). However, overlooked is how liberalization affects the marketing mix responses of incumbent firms. This is a surprising omission as liberalization represents a dramatic transition from a protected market to a more open, consumer-oriented market (Majumdar 1997), suggesting an important role for incumbent firms' marketing mix responses. In addition, existing studies on incumbent firms' responses have focused on a single

industry such as retail or banking, studying drivers and marketing mix responses specific to the industry in question, which raises the intriguing research question of what are the common factors that drive marketing mix responses of firms in different industries to liberalization? In Appendix A, we present an organizing framework and a summary of the related extant work respectively.

Scholars in economics and international business have studied liberalization, focusing on the effects of liberalization on the performance of incumbent firms. Some studies report that liberalization improves incumbent firms' performance (e.g., Haskel, Pereira, and Slaughter 2007) through access to new knowledge, while others report that liberalization can hurt incumbent firms' performance (e.g., Aitken and Harrison 1999; Kosová 2010). One reason for these conflicting findings is that incumbent firms may have differing marketing mix responses to liberalization which, in turn, may affect their performance. Yet, as we note above, incumbent firms' marketing mix responses to liberalization have been overlooked in the literature.

Crucially, while past research has examined firms' marketing mix responses to domestic competition (Steenkamp et al. 2005; Ailawadi et al. 2010), from the perspective of incumbent firms, liberalization creates distinctive competitive characteristics with no comparable analog in domestic competition. First, following liberalization, incumbent firms, with experience in protected markets, may be disadvantaged relative to foreign entrants, with extensive experience in open markets (Hitt et al. 2000). Second, following liberalization, foreign entrants have more state-of-the-art, superior marketing and management practices (Grubaugh 1987; Morck and Yeung 1991) than in domestic competition. Thus, for incumbent firms, liberalization is a source of knowledge about superior marketing and management practices. In contrast to domestic competition, following liberalization, incumbent firms face heterogeneous competitors from

different countries. Finally, following liberalization, incumbent firms, relative to foreign entrants, have a distinctive advantage in terms of their knowledge of domestic institutions and market forces. Hence, it is unclear whether insights on incumbent firms' marketing mix responses to domestic competition, the primary focus of past research, apply to liberalization.

Thus, we examine incumbent firms' marketing mix responses to liberalization and how their marketing mix responses, in turn, affect their performance? We consider the 4P's of incumbent firms' marketing mix responses - advertising, product mix, promotions, and distribution (van Waterschoot and van den Bulte 1992). We note that broadly there are two types of liberalization, trade liberalization that lower import duties to bring in cheaper products, and foreign direct investment (FDI) liberalization by the removal of restrictions relating to encourage foreign firm entry in a market, each of which may have different effects on incumbent firms' responses. In this research, we focus on the effects of FDI liberalization on incumbent firms' marketing mix responses.

The research's findings also have high managerial relevance. Countries liberalize in a quest for economic growth, creating challenges for managers of incumbent firms, who are, naturally, concerned about the negative effects of liberalization. By studying the factors that influence incumbent firms' marketing mix responses, and the effects of these responses on performance, we aim to arm managers of incumbent firms with insights on developing appropriate marketing mix responses to liberalization. Our findings suggest that incumbent firms can improve their performance following liberalization by as much as 30%, by suitably adjusting their marketing mix responses.

Knowledge is a key asset, representing a source of sustainable competitive advantage for firms (Grant 1996; Mudambi and Swift 2012). Applying this idea, we propose that incumbent

firms' knowledge plays a unique role in the context of liberalization. While incumbent firms have an advantage in terms of knowledge of domestic institutions and market forces, compared to foreign entrants, they are disadvantaged on their knowledge of superior management practices and experience of effectively operating in liberalized open markets. Anchoring our theoretical reasoning in the knowledge-based view of the firm (Grant 1996), we propose that the domestic market knowledge and foreign market knowledge of incumbent firms will influence their marketing mix responses (advertising, product mix, promotions, and distribution) to liberalization.

To establish empirical identification of the effects of liberalization on incumbent firms' marketing mix responses, we seek a context where the liberalization of the market is exogenous. One such context is India in 1991, where following a severe balance of payments crisis, the Indian government enacted FDI liberalization reforms. We use the exogenous variation in the FDI liberalization of Indian industries (some industries were liberalized to FDI, while others were not), to estimate the causal effect of liberalization on incumbent firms' marketing mix responses using a difference-in-differences approach. We measure incumbent firms' domestic market knowledge using their business group affiliation, and their foreign market knowledge using their foreign exchange earnings and spending. We then examine the effects of incumbent firms' marketing mix responses on their performance, measured by their profitability.

The results indicate that, on average, incumbent firms intensified their product mix and promotion responses to liberalization. Further, there is heterogeneity in incumbent firms' marketing mix responses to liberalization, while incumbent firms with greater domestic market knowledge intensified their marketing mix responses to liberalization, incumbent firms with greater foreign market knowledge muted their marketing mix responses. Additional analysis of

the effects of incumbent firms' marketing mix responses to liberalization on their performance indicates contingent effects, based on their domestic and foreign market knowledge.

The study's findings make four contributions to the extant literature. First, we extend the marketing response literature, which has primarily focused on firms' responses to domestic competition, by generating insights on incumbent firms' marketing mix responses to liberalization, an important and substantive context. Second, the extant marketing literature has primarily focused on how the size and financial capacity of incumbent firms affect their marketing mix responses and performance. By demonstrating the key role of incumbent firms' knowledge on their marketing mix responses, we identify a novel driver of their response, domestic and foreign market knowledge. Third, we also contribute to the marketing literature by a comprehensive examination of four marketing mix variables - advertising, product mix, promotions, and distribution, which is driven in part, by our focus on the emerging market of India, and the resultant use of the Prowess database. In this regard we note that much of the extant research in marketing has focused on advertising and research and development (R&D)) spending, overlooking product mix, promotions, and distribution responses. Finally, this research's findings also contribute to the economics and international business literature on liberalization, which has overlooked the marketing attributes of incumbent firms.

For managerial practice, the integration of findings across incumbent firms' marketing mix response and performance models indicates that a more intense marketing mix response following liberalization does not ensure superior performance. The specific pattern of findings generate actionable guidelines for managers of incumbent firms, based on their domestic and foreign market knowledge, facing liberalization. The findings are also useful to 1) managers of foreign firms entering liberalized markets to identify which incumbent firms will emerge as

strong competitors, 2) policymakers to help incumbent firms perform better following liberalization, thus achieving economic growth without hurting domestic firms, and 3) investors to identify incumbent firms for investment in newly liberalizing markets.

We organize the rest of the paper as follows. We first present our conceptual framework and theory related to the effects of liberalization on incumbent firms' marketing mix responses. We then discuss the data, method, and results. We conclude with a discussion of the paper's theoretical contributions, implications for marketing practice, and limitations and opportunities for further research.

1.2 THEORETICAL BACKGROUND

We first provide an overview of liberalization and discuss how liberalization differs from domestic competition, the focus of most past research on competition in the marketing literature. Next, we discuss the related literature that may inform incumbent firms' marketing mix responses to liberalization. Following that, using the knowledge-based view of the firm (Grant 1996) as the theoretical anchor, we propose that incumbent firms' domestic market knowledge and foreign market knowledge will influence their marketing mix responses to liberalization.

1.2.1 Liberalization: A Brief Overview

Liberalization intensifies competition in an industry, both by increasing the number of competitors and introducing new ways to compete in the marketplace (Blomstrom and Kokko 2003; Driffield and Love 2007). Typically, during liberalization, the permitted level of foreign ownership of firms is increased to encourage foreign firm entry. If a foreign firm is already present in the market, liberalization provides the firm's foreign owner, the opportunity to increase ownership and control over operations in the market (Chhibber and Majumdar 1999).

Following liberalization, most countries devote considerable attention and resources to attracting foreign firm investment (Kosová 2010). Liberalization is undertaken both in expectation of generating foreign exchange and jobs and, more importantly, to realize benefits to the economy by spillovers from foreign firms (Farole and Winkler 2012). These spillovers, include for example, improvements in domestic firms' practices through diffusion of the superior management practices of foreign firms entering the market (Zhang, Li, and Li 2014). Further, through exposure to sophisticated foreign competitors, liberalization incentivizes domestic firms to acquire knowledge on efficient production techniques, innovative marketing and branding strategies, and novel product designs (Barkema and Drogendijk 2007).

1.2.1.1 Key Differences between Liberalization and Domestic Competition

Liberalization differs on multiple dimensions from domestic competition, the primary focus of past marketing scholarship (e.g., Debruyne and Reibstein 2005; Mukherji et al. 2011). First, when markets liberalize, incumbent firms, hitherto accustomed to operating in a protected market, experience a shock, as the market transitions from closed to more consumer-oriented (Aulakh, Kotabe, and Teegen 2000). Following liberalization, incumbent firms, with experience only in protected markets, may be disadvantaged relative to foreign entrants with experience in open markets (Hitt et al. 2000) as they may be unfamiliar with the strategies and practices of foreign firms entering the market following liberalization. Thus, compared to domestic competition, liberalization creates high uncertainty for incumbent firms. Second, foreign entrants following liberalization have superior marketing and management practices, and strengths in creating intangible assets i.e., brands and/or technologies (Morck and Yeung 1991) to which incumbent firms have little prior exposure. Thus, liberalization may be a source of substantial knowledge for incumbent firms who can learn more about new technologies, brand management,

and business processes from their foreign competitors (Banerjee et al. 2015) than may be possible from domestic competitors. Third, the foreign firms encountered by incumbent firms following liberalization typically originate from different countries (Zhang et al. 2010). Thus, following liberalization, there is considerable heterogeneity in competitors faced by incumbent firms. This is, in contrast to domestic competition where, by definition, competitors are from the local market. Finally, a competitive advantage for incumbent firms facing liberalization is their knowledge about domestic consumers, market forces, and institutions, which is less likely to be an advantage during domestic competition, where all firms have this local knowledge.

1.2.2 Liberalization and Incumbent Firms' Marketing Mix Responses

Scholars in economics and international business have devoted considerable attention to identifying how liberalization affects incumbent firms' performance (Aitken and Harrison 1999; Haskel, Perreira, and Slaughter 2007). Liberalization can improve incumbent firms' performance by enabling domestic firms to acquire new knowledge from foreign firms (Spencer 2008). Yet, foreign firms can crowd incumbent firms out of markets for product, labor, and capital, causing them to lose market share or exit the industry altogether (Agosin and Machado 2005). Not surprisingly, therefore, there is mixed empirical evidence on how liberalization affects incumbent firms' performance, which varies based on their size, financial strength, and technological capabilities (Blalock and Simon 2009; Eapen 2012). We contend that a more complete picture of the effects of liberalization on incumbent firms' performance can be obtained by insights on the marketing mix responses of incumbent firms to liberalization, which prior research has hitherto overlooked.

Marketing can improve firm performance by increasing brand equity, customer equity, and customer satisfaction (Ailawadi, Lehmann, and Neslin 2003; Fornell et al. 2006; Rust,

Lemon, and Zeithaml 2004), all of which can help incumbent firms compete against incoming foreign firms. In addition, foreign firms who enter a market following liberalization have strong intangible assets and marketing practices (Grubaugh 1987). Hence, incumbent firms may need to intensify marketing mix responses to counteract them. Liberalization alters demand patterns, highlighting the need for firms to deliver products and services valued by consumers (Day 1994). Thus, adopting appropriate marketing mix responses is crucial for incumbent firms to maintain strong performance following liberalization.

1.2.3 Effect of Liberalization on Incumbent Firms' Marketing Mix Responses

Following liberalization, the market transitions from being protected to consumer-oriented, progressively moving toward an open and competitive market system (Lora 1997). To counter the uncertainty of the changing environment, incumbent firms may respond by intensifying their marketing mix responses that is, the 4P's – advertising, product mix, promotions, and distribution (van Waterschoot and van den Bulte 1992).

Incumbent firms' existing ties to trade partners, brand recognition, and knowledge of consumers, may be a competitive advantage not enjoyed by foreign entrants, following liberalization. To utilize this competitive advantage, incumbent firms may intensify their marketing mix responses, so they can deliver products valued by consumers and better cater to their preferences, which in turn, may help them retain consumers, maintain, and perhaps, even grow their sales and profits.

Foreign firms who enter following liberalization, with their superior intangible assets and marketing practices (Grubaugh 1987; Morck and Yeung 1991), present a learning opportunity for incumbent firms. Any knowledge transfers from foreign firms to incumbent firms, through

imitation, forward and backward linkages with suppliers and distributors, and employee transfers (Spencer 2008) may cause incumbent firms to intensify their marketing mix responses.

As foreign entry following liberalization typically entails local manufacturing by foreign firms, there may be significant local financial investment, signaling the long-term commitment of foreign firms to the market. Most foreign firms who enter following liberalization possess strong financial and managerial resources (Morck and Yeung 1991). Thus, incumbent firms may infer that foreign entrants will continue to operate in the market in the long-term even if their operations are not profitable in the short-term (Luoma et al. 2018). Given the seriousness of the competitive threat posed by foreign firms, incumbent firms may respond by intensifying their marketing mix responses.

1.2.4 Incumbents' Knowledge and their Marketing Mix Responses to Liberalization

Firms compete not only through the creation, replication, and transfer of their own knowledge but also through their ability to absorb the knowledge of competitors (Zander and Kogut 1995). The ability of a firm to recognize the value of new, external knowledge, assimilate it, and apply it to commercial ends is largely a function of its prior knowledge (Cohen and Levinthal 1990). As liberalization results in the diffusion of superior management and marketing practices from foreign entrants to incumbent firms, we propose that incumbent firms' existing knowledge will play an important role and that their marketing mix responses following liberalization (Meyer and Sinani 2009) will be influenced by their knowledge (which enhances their responsiveness and adaptability to institutional changes)(Grant 1996).

When faced with liberalization, incumbent firms' knowledge of domestic consumers, market forces, institutions, and trade partners represents a source of competitive advantage (Dau 2013). Specifically, incumbent firms with greater domestic market knowledge are better situated

to absorb superior management and marketing practices from foreign entrants (Cohen and Levinthal 1990). Likewise, incumbent firms' prior knowledge of foreign markets, firms, and consumers may help them assess the threat posed by the foreign firms, understand the marketing actions of foreign firms, and choose appropriate marketing mix responses to liberalization. Thus, we propose that incumbent firms' domestic and foreign market knowledge (Mitra and Golder 2002; Banerjee et al. 2015) will influence their marketing mix responses to liberalization. We present the conceptual framework in Figure 1.1.

---- Insert Figure 1.1 here ----

1.2.5 Domestic Market Knowledge and Incumbent Firms' Marketing Mix Responses

Incumbent firms with greater domestic market knowledge may have accumulated knowledge of the tastes and preferences of domestic consumers and practices of domestic trade partners (Thornhill and Amit 2003), a competitive advantage relative to foreign entrants, which they may leverage to better address the market's needs by intensifying their marketing mix responses.

Such domestic market knowledge may create a synergistic effect, enabling incumbent firms to learn quickly from foreign firms (Cohen and Levinthal 1990). Hence, we propose that incumbent firms' existing knowledge may enable them to absorb superior marketing practices from incoming foreign firms (Spencer 2008), so that incumbent firms with greater domestic market knowledge may imitate foreign entrants who are, generally, much stronger in marketing, intensifying their marketing mix responses.

As incumbent firms with greater domestic knowledge have superior knowledge of domestic institutions and market forces (Mitra and Golder 2002), they may be aware of the competitive threat posed by foreign entrants following liberalization and respond to this threat by

intensifying their marketing mix responses. Finally, firms perceive competitors with similar resources and capabilities as relevant threats (Chen 1996). Following liberalization, incumbent firms with greater domestic market knowledge may consider incoming foreign firms as their natural competitors, and may respond by intensifying their marketing mix responses.

1.2.6 Foreign Market Knowledge and Incumbent Firms' Marketing Mix Responses

Incumbent firms with greater foreign market knowledge may have prior insights into the marketing practices of foreign firms. Through their ties with economic actors in foreign markets (e.g. importers, exporters, trade partners, buyers, competitors, and governments), firms with greater foreign market knowledge can learn about more efficient product designs and marketing strategies deployed by foreign firms (Eriksson et al. 1997). Foreign market knowledge may allow incumbent firms to absorb new knowledge from foreign entrants and imitate their practices, which may result in intensification of their marketing mix responses. Further, foreign market knowledge may increase incumbent firms' awareness of the superiority of foreign firms, causing them to perceive foreign entrants as strong threats and intensify their marketing mix responses.

At the same time, as incumbent firms with greater foreign market knowledge may have competed with foreign firms in other markets, they may have already increased their marketing to attract foreign buyers and may not intensify their marketing mix responses to liberalization. Further, the knowledge gap between incumbent firms with foreign market knowledge and foreign entrants on marketing practices may not be large, so that liberalization may not provide a strong learning opportunity for them (Meyer and Sinani 2009). Thus, incumbent firms with greater foreign market knowledge may mute their marketing mix responses to liberalization.

Summary. Developments in extant theory suggests that liberalization creates uncertainty and turbulence for incumbent firms, as well as an opportunity to learn superior management and marketing practices from incoming foreign firms, to which they may respond by adjusting their marketing mix. Incumbent firms' marketing mix responses may be influenced by their extant knowledge, specifically, their domestic market knowledge and foreign market knowledge. While incumbent firms' domestic market knowledge may cause them to intensify their marketing mix responses, the extant literature provides competing predictions on how incumbent firms' foreign market knowledge may influence their marketing mix responses.

1.3 METHOD

1.3.1 Identification Strategy

A key concern for estimating the effects of liberalization on incumbent firms' marketing mix responses is endogeneity, which can arise from two primary sources, reverse causality and omitted variables. Reverse causality may occur if incumbent firms' marketing mix responses erect strategic barriers, discouraging foreign firms from performing effectively in the market that they have entered. Alternatively, omitted variables can be a source of endogeneity, as foreign firms may enter markets with high growth prospects or weak incumbent firms. As the inclusion of firm-level controls and firm-fixed effects may not capture all sources of endogeneity, we seek a context with an exogenous shock of liberalization, which provides a quasi-experimental setting. One such context, which provides an institutional setting to make robust inferences, is India's FDI liberalization reform in 1991, which we describe below.

1.3.2 Empirical Context

Before 1991, the Indian government had a protectionist, inward-focused economic policy. In early 1991, various macroeconomic developments including deficits, increase in oil

prices, and political uncertainty led to a balance-of-payments crisis in the Indian economy. To manage this economic crisis, the Indian government sought financial assistance from the International Monetary Fund (IMF), which offered support conditional on the implementation of liberalization reforms that would integrate the Indian economy with the global economy (Topalova and Khandelwal 2011). In response, the Indian government enacted FDI liberalization reforms in August 1991. FDI liberalization entailed the reduction of foreign direct investment barriers i.e. the percentage of FDI equity allowed was increased from 40% to 51% in 46 of the 129 primary industry categories defined according to a three-digit industrial code (Office of the Economic Advisor, 2001). In the remaining industries, the limit on FDI equity remained at 40% and foreign investors had to obtain approval from the Indian Government to increase their investment above 40%. FDI inflows dramatically increased after liberalization. The stock of FDI in India increased from less than US$ 155 million in 1991 to US$ 586 million by 1993(Nagaraj 2003).

To eliminate political opposition to the FDI liberalization reform, the Indian parliament enacted the reform without much debate, creating an exogenous shock for incumbent firms. As Dr. Chelliah, a member of the Planning Commission (the body responsible for the reform) noted "When we started economic reforms in 1991….we didn't have time to sit down and think exactly what kind of a development model we needed…there was no systematic attempt to see two things: one, how have the benefits of reforms distributed, and two, ultimately what kind of society we want to have, what model of development should we have?" (Warrier 2004). Supporting the view that the liberalization reform in India in 1991 was an exogenous shock, we note that it has been used as a quasi-experimental setting in studies in economics (Aghion et al.

2008; Topalova and Khandelwal 2011; De Loecker et al. 2016) and finance (Alfaro and Chari 2014).

Hence, we exploit the exogenous shock of FDI liberalization reforms in India in 1991 to estimate the causal effects of liberalization on incumbent firms. The exogenous FDI liberalization reform offers three advantages with respect to estimation. First, it enables us to alleviate concerns resulting from endogeneity. As the FDI liberalization reform was sudden and unanticipated, there was no time for firms to lobby for or against it, precluding concerns of reverse causality. Further, the presence of restrictive policies related to foreign competition before the reform prevents an unobserved variable (e.g., the firm's intention to compete with foreign firms) from influencing the key explanatory variables (domestic and foreign market knowledge) and dependent variables (marketing mix responses). Specifically, the sudden and unanticipated removal of restrictions in 1991 significantly reduces the likelihood that incumbent firms intended to compete with foreign firms and thus reduces the likelihood that they acquired domestic or foreign market knowledge that would help them compete against foreign firms. Second, the reform enables us to study incumbent firms' marketing mix responses from the first time the market was liberalized. While FDI liberalization changes happened in developed markets several decades ago, and so are difficult to study, they are easier to study in India as FDI liberalization happened in the recent past. Finally, the quasi-experimental setting of the FDI liberalization reform in India (i.e. by which some but not other industries were liberalized to FDI) enables us to account for other macroeconomic factors that may affect incumbent firms' marketing mix responses. In doing so, we are able to isolate the causal effect of liberalization on the marketing mix responses of incumbent firms (Vig 2013) and the contingent effects of incumbent firms' knowledge on their marketing mix responses during liberalization.

Exogeneity of the FDI Liberalization Shock. The Industrial Policy Resolution of 1991 (Office of the Economic Advisor, 2001) provides the list of industries which were liberalized to FDI. We empirically confirm the exogeneity of FDI liberalization in India using kernel density plots of firm characteristics (i.e., assets, profitability and sales) (Figure B1 of Appendix B) in industries which were liberalized (vs. not). The kernel density plots indicate that the distribution of firm characteristics is largely similar across the two groups, before FDI liberalization. In addition, in Table B1 of Appendix B, we report t-tests comparing average values of key variables across liberalized and un-liberalized industries before FDI liberalization in 1991, and find no significant differences.

1.3.3 Data

We use data on Indian publicly-listed incumbent firms from the Prowess Database of the Centre for Monitoring Indian Economy (CMIE) to examine the effects of liberalization on incumbent firms' marketing mix responses. Firms in this database account for 75% of all corporate taxes and more than 95% of excise duties collected by the Indian government. We collect data on both incumbent and foreign firms' advertising, promotions, and distribution spending, number of products, group membership, foreign exchange earnings, foreign exchange spending, total assets, total sales, and profit before interest, taxes, depreciation and amortization (EBITDA) between 1988 and 2000. We provide details of the marketing data classification by Prowess in the Appendix C. The first year from which data is available in the Prowess database is 1988, as we lose one year because of lagging explanatory variables, the final sample spans an twelve-year period (1989 – 2000). Our results are robust to using 1999 or 1998 as the final year for analysis, as we detail further in the additional analyses and robustness checks section below.

After excluding observations of incumbent firms 1) incorporated after 1991, 2) where asset information is missing, 3) for which the reporting period is not 12 months, 4) from industries with fewer than two firms, and losing one year of observations due to lagged variables, we have a sample of 16,633 firm-year observations for estimation. We describe the constructs, measures, and data sources in Table 1.1.

---- Insert Table 1.1 here----

1.3.4 Measures

Liberalization. The liberalization variable is coded as 1 for firms in industries that were liberalized to FDI, and 0 for firms in industries that were not liberalized to FDI (M = .467, SD = .499). As the FDI liberalization policy was implemented at the three-digit National Industrial classification (NIC) level, we compute this variable at this level.

Post. We code the *Post* variable as 1 for firm-year observations after FDI liberalization in 1991 and 0 for those before FDI liberalization (M = .894, SD = .308).

Marketing Mix Responses. Advertising represents the firm's spending on media. To exclude any scale effects of firm size, we scale advertising spending (and other spending measures below) by the firm's total assets (M = .010, SD = .025). Product mix represents the diversity in the firm's product portfolio, which we obtain from firms' annual reports (Indian firms are required by the Companies Act of 1956 to disclose product-level information in their annual reports).

We measure the firm's product mix by the number of products reported by the firm in a given year (M = 4.573, SD = 4.429). Promotions represents a firm's spending on rebates,

discounts, and sales promotions (M = .021, SD = .038). Distribution represents a firm's spending to deliver products to various channel intermediaries including retailers, wholesalers, and distributors, including on consignment and loss of goods in transit (M = .026, SD = .040).

Domestic Market Knowledge. We measure a firm's domestic market knowledge using its business group affiliation. Firms affiliated with business groups have cross-shareholding and inter-locking directorates, which facilitate knowledge sharing between business group firms (Banerjee et al. 2015). Typically, within business groups, there is a core administration (Yiu et al. 2007) responsible for sharing information on domestic markets. Prowess classifies firms as belonging to business groups or not, using a variety of sources to classify firms into various ownership groups based on continuous monitoring of firm shareholding, new announcements, and a qualitative understanding of the group-wise behaviors of individual firms (Chittoor et al. 2015). Following prior research using this classification (Khanna and Palepu 2000; Chacar and Vissa 2005), we code the domestic market knowledge variable as 1 if the firm belongs to a business group and 0 otherwise (M = .498, SD = .500).

Foreign Market Knowledge. Extant research (MacGarvie 2006; Goldberg et al. 2009; Halpern, Koren, and Szeidl 2015) suggests that firms can gain experience of foreign sellers by buying imported inputs from them, and can gain knowledge about foreign buyers' practices and processes by exporting to them (Leonidou and Kaleka 1998; Theodosiou and Katsikea 2013). Thus, we operationalize a firm's foreign market knowledge using a sum of two measures – 1) foreign exchange spending, which includes a firm's spending on import of raw materials, import of stores and spares, import of finished goods, import of capital goods, and forex spending on royalties and technical knowhow, and 2) foreign exchange earnings, which includes earnings from export of goods, export of services, and deemed export. To arrive at our measure of foreign

market knowledge, we take the sum of these two measures, and scale it using the firm's total assets (M = .146, SD = .313). For missing values of foreign exchange spending and foreign exchange earnings, we impute values to .0001 before computing the sum.

Control Variables. As a firm's size and its profitability may affect its marketing mix responses, we control for the firm's size by its total assets (M = 73.074 USD Million, SD = 396.089 USD Million), and for the firm's profitability by its return on assets, EBITDA/ Total assets (M = .116, SD = .129). We also control for the domestic competition in a firm's industry, by accounting for the relative participation of domestic firms in an industry, using the cumulative market share of all domestic firms in the industry (M = .855, SD = .148). We lag all control variables by one year, with the exception of domestic competition, which is contemporaneous. We provide the descriptive statistics and correlation matrix of all variables, winsorized at 0.25%, in Table 1.2.

---- Insert Table 1.2 here ----

1.3.5 Estimation Approach – Difference-in-differences

A quasi-experiment is defined as a naturally occurring contrast between a treatment and a comparison condition in which the cause usually cannot be manipulated (Cook, Campbell, and Shadish 2002). We argue that a quasi-experiment occurred during the time of FDI liberalization in India because of an exogenous event: the FDI liberalization of some Indian industries but not others. As a result of FDI liberalization, there was a natural treatment group (firms in industries liberalized to FDI) and a control group (firms in unliberalized industries), using which we can measure the causal effect of liberalization.

We examine the effects of liberalization on incumbent firms using the Difference-in-Differences method, which is well-suited to establishing causal claims in a quasi-experiment (Chari and Henry 2004; Vig 2013). The difference-in-differences method compares the effect of the event (in this case, FDI liberalization) on groups that are liberalized to FDI (the treatment group) with those which are not (the control group). To understand the effect of liberalization on incumbent firm's marketing mix responses, we subtract the average value of the marketing response before the event from the average value of the marketing response after the event. However, other factors might have changed as well. Hence, we use incumbent firms in the control group to account for any other observable or unobservable factors.

We provide model-free evidence, which provides the intuition behind our empirical approach. We divide incumbent firms into two groups, liberalized firms, the treatment group and un-liberalized firms, the control group. We examine two periods – pre (before FDI liberalization in 1991) and post (after FDI liberalization in 1991). We take the difference for the firms in the liberalized group pre and post liberalization for each marketing response variable, by collapsing to averages for each period. Similarly, we take the difference for the firms in the un-liberalized group, and compute the difference between these two differences to arrive at the difference-in-differences estimate. The model-free evidence suggests, that in response to liberalization, incumbent firms intensified their product mix (b = .617, $p<.01$) and promotions (b=.003, $p<.05$), but not their advertising and distribution.

To estimate the difference-in-differences model, we regress the incumbent firm's marketing response on the interaction of Liberalization and Post variables and the control variables. We control for unobserved heterogeneity using firm-fixed-effects, and for any effects of time using year-fixed-effects.

$$Incumbent\ firm's\ marketing\ response_{it} = \alpha_{0i} + \alpha_1 Liberalization_{it} + \alpha_2 Post_{it} + \alpha_3[Liberalization_{it} * Post_{it}] + \alpha_4 Firm\ size_{it} + \alpha_5 Firm\ profitability_{it} + \alpha_6 Domestic\ competition_{it} + \gamma_t + \varepsilon_{it} \quad (1)$$

where α_{0i} represents the firm-fixed-effect, α_3 represents the causal effect of liberalization on incumbent firms' marketing mix responses, γ_t represents the year-fixed-effects. We estimate four such equations for each marketing response of incumbent firms – advertising, product mix, promotions, and distribution.

We exploit the cross sectional variation in the treatment and control groups to estimate the heterogeneous treatment effects of liberalization on incumbent firms' marketing mix responses contingent on their domestic market knowledge and foreign market knowledge (Vig 2013). This specification enables us to examine the effects of knowledge on incumbent firms' marketing mix responses in liberalized industries (vs those in un-liberalized industries) following liberalization. Thus, the estimation approach eliminates concerns of endogeneity that an unobserved variable may influence both the dependent variable and independent variables.

Thus, we estimate the following model

$$Incumbent\ firms' marketing\ response_{it} = \beta_{0i} + \beta_1[Liberalization_{it} * Post_{it} * Domestic\ market\ knowledge_{it}] + \beta_2[Liberalization_{it} * Post_{it} * Foreign\ market\ knowledge_{it}] + \beta_3[Post_{it} * Domestic\ market\ knowledge_{it}] + \beta_4[Post_{it} * Foreign\ market\ knowledge_{it}] + \beta_5[Liberalization_{it} * Domestic\ market\ knowledge_{it}] + \beta_6[Liberalization_{it} * Foreign\ market\ knowledge_{it}] + \beta_7[Post_{it} * Liberalization_{it}] + \beta_8 Post_{it} + \beta_9 Liberalization_{it} + \beta_{10} Domestic\ market\ knowledge_{it} + \beta_{11} Foreign\ market\ knowledge_{it} + \beta_{12} Firm\ size_{it} +$$

$\beta_{13} Firm\ profitability + \beta_{14} Domestic\ competition_{it} + \gamma_t + \varepsilon_{it}$

(2)

where *i* is the subscript for the firm and *t* is the subscript for the year, β_{0i} refers to the firm-fixed-effect, and γ_t represents the year-fixed-effects, β_1 refers to the heterogeneous treatment effect of liberalization on incumbent firms with domestic market knowledge, and β_2 refers to the heterogeneous treatment effect of liberalization on incumbent firms with foreign market knowledge.

1.4 RESULTS

We first estimated the difference-in-differences model without the control variables, followed by with the inclusion of the control variables. We present the results of the difference-in-differences model without the control variables in Column 1-4 of Panel A in Table 1.3. While liberalization did not affect incumbent firms' advertising (b = -.045, not significant (n.s.)), incumbent firms intensified their product mix (b = 27.2, $p<.01$), promotions (b = .178, $p<.05$), and distribution (b = .215, $p<.01$) in response to liberalization.

We present the results of the difference-in-differences model including controls in Column 1-4 of Panel B in Table 1.3. While liberalization did not affect incumbent firms' advertising (b = .003, *n.s.*) and distribution (b = .079, *n.s.*), incumbent firms intensified their product mix (b = 24.7, $p<.01$) and promotions (b = .322, $p<.01$) in response to liberalization.

In Column 1-4 of Panel C of Table 1.3, we present the results of the heterogeneous treatment effects model, including the effects of incumbent firms' domestic market knowledge and foreign market knowledge. These results suggest that incumbent firms with greater domestic market knowledge are more likely to intensify their advertising (b = .003, $p<.05$), product mix (b

= .323, *p<.10*), promotions (b = .005, *p<.05*), and distribution (b = .004, *p<.10*), in response to liberalization.

Incumbent firms with greater foreign market knowledge are less likely to intensify their promotions (b = -.008, *p<.05*) and distribution (b = -.009, *p<.01*) in response to liberalization. However, liberalization has no effect on the advertising (b = .003, *n.s.*) and product mix (b = -.081, *n.s.*) of incumbent firms with greater foreign market knowledge.

Next, we discuss the effects of the control variables. Firm size has a positive effect on incumbent firms' product mix (b = 16.4, *p<.01*) and a negative effect on their promotions (b = -.041, *p<.05*). Firm profitability has a positive effect on incumbent firms' advertising (b = .006, *p<.01*), promotions (b = .010, *p<.01*), and distribution (b = .010, *p<.01*), while domestic competition does not affect incumbent firms' marketing mix responses.

Summary of Results. We provide a summary of results across the difference-in-differences model and heterogeneous treatment effects model in Table 1.4. The results of the difference-in-differences model suggest that incumbent firms intensified their product mix and promotions in response to liberalization. The results of the heterogeneous treatment effects model suggest that while incumbent firms with greater domestic market knowledge intensified their marketing mix responses to liberalization, incumbent firms with greater foreign market knowledge muted their marketing mix responses to liberalization. We next report on additional analysis that examine the robustness of the results.

----Insert Table 1.3 and Table 1.4 here----

1.4.1 Additional Analyses and Robustness Checks

Reduction in Trade Tariffs. In addition to FDI liberalization, in 1991, the Indian government also liberalized trade by decreasing trade tariffs in some manufacturing industries.

Import tariffs for products are reduced during trade liberalization to increase the attractiveness of the market for foreign firms to sell their products (manufactured outside). Trade liberalization can increase dumping and predatory price-based competition (Irwin 2005). To establish that the results are robust to concurrent reduction in trade tariffs, we control for the reduction in trade tariffs across industries in the estimated model, using an indicator variable coded as 1 if the incumbent firm's industry had reduced tariffs in 1991 (0 if not). We present the results of this estimation in Panel A of Table 1.5, which are consistent with those in Table 1.3.

Controls for Number of Foreign Firms. Incumbent firms in industries where there were greater number of foreign entrants may be more motivated to intensify their marketing mix responses. To rule out this alternative explanation, we re-estimate the model by controlling for the number of foreign firms in an industry. We present these results in Panel B of Table 1.5, which are consistent with those in Table 1.3.

Controls for Foreign Firms' Marketing. Incumbent firms' marketing responses to liberalization may be influenced by the marketing actions of foreign entrants. Thus, we re-estimate the models by controlling for foreign firms' advertising in an industry by dividing the average advertising intensity of foreign firms by the average advertising intensity of all firms in the industry, in the equation for incumbent firms' advertising responses. Similarly, we re-estimate the models by controlling for foreign firms' products, promotions, and distribution in each of the corresponding equations. We present these results in Table D1 of Appendix D, which are consistent with those in Table 1.3.

Controls for Industry Concentration and R&D Intensity. Incumbent firms in industries with lower industry concentration and those with greater R&D intensity may be more motivated to intensify their marketing responses to liberalization. To rule out these alternative explanations,

we re-estimate the model including industry concentration and R&D intensity as controls[1]. We present the results of this estimation in Table D2 of Appendix D, which are consistent with those in Table 1.3.

Industry Fixed Effects. To rule out that industry effects are driving the estimation results, we re-estimate the model with the inclusion of industry fixed effects interacted with the Post variable. We present these results in Table D3 of Appendix D, which are consistent with those in Table 1.3.

Excluding Observations from 1999 and 2000. To ensure that our results are robust across different samples, and that they are robust to different choices for the final year of analysis, we re-estimate the model excluding observations belonging to the year 2000. We present these results in Table D4 of Appendix D, which are consistent with those in Table 1.3. Next, we re-estimate the model excluding observations belonging to the year 2000 and 1999, and present these results in Table D5 of Appendix D, which are consistent with those in Table 1.3.

Winsorizing. To ensure that our results are robust to different levels of winsorizing, we re-estimate the model by winsorizing the variables at 0.5% instead of 0.25%. We present the results of this estimation in Table D6 of Appendix D, which are consistent with those in Table 1.3.

1.5 INCUMBENT FIRMS' MARKETING MIX RESPONSES AND PERFORMANCE

We next examine the effects of incumbent firms' marketing mix responses on their performance to generate insights on whether their responses to liberalization helped or hurt their performance.

[1] As few firms report R&D spending, we impute a value of .0001 for missing values of R&D spending.

We estimate a model where the dependent variable is incumbent firms' profitability and the key independent variables are their advertising, product mix, promotions, and distribution responses to the liberalization. As incumbent firms' marketing in the current period may be affected by liberalization, we lag all marketing response variables by one year. We measure the extent of FDI competition faced by an incumbent firm using the cumulative market share of all foreign firms in the industry.

We estimate a model including all three-way interactions of incumbent firms' marketing mix responses and FDI competition with the two moderators from the first stage – domestic market knowledge and foreign market knowledge. We control for unobserved heterogeneity using firm-fixed-effects, and for annual changes using year-fixed-effects. To control for any industry-level changes in the performance of incumbent firms after liberalization, we include the interaction term between the variable Post and industry dummies, in the model. Similar to the estimation of incumbent firms' marketing mix responses, we control for firm size, firm profitability, and domestic competition.

We present the performance model in Table 1.6. We present a comparison of incumbent firms' marketing mix responses with the effect of their marketing response on performance (using the directionality of the three-way interactions) in Table 1.7. Below, we discuss the convergence and divergence between incumbent firms' marketing mix responses and appropriate marketing mix responses as indicated by the parameter estimates of the three-way interaction terms in the performance model. We discuss the implications of these insights in the managerial implications section.

---- Insert Tables 1.6 and 1.7 here ----

1.5.1 Domestic Market Knowledge

The results of the marketing response model in Table 1.3 indicate that incumbent firms with greater domestic market knowledge intensified their advertising, product mix, promotions, and distribution in response to liberalization. The results of the performance model (Table 1.6 and Table 1.7) indicate that this was partially the appropriate strategy for them, as their distribution (b = 1.602, $p<.10$) responses improve their performance. However, the results of the performance model indicate that for incumbent firms with greater domestic market knowledge, their advertising (b = -.714, n.s.), product mix (-.008, n.s.), and promotions (b = -.617, n.s.) responses which they intensified, did not improve performance following liberalization, suggesting opportunities for them to improve performance.

1.5.2 Foreign Market Knowledge

While the results of the marketing response model (Table 1.3) indicate that incumbent firms with greater foreign market knowledge muted their promotions and distribution responses to liberalization, the performance model (Table 1.6 and Table 1.7) indicates that this was partially the appropriate strategy for them to follow, as decreasing their distribution responses (b = -2.237, $p<.01$) improves performance, but increasing their promotions responses (b = 1.692, $p<.05$) also can improve performance, suggesting opportunities for them to improve performance.

1.6 GENERAL DISCUSSION

Several markets are liberalizing, transitioning from protected markets to open markets. These transitions are disruptive, dramatically affecting the competitive environments faced by incumbent firms in these markets, suggesting a key role for their marketing mix responses on

their performance. Yet, there are few insights on incumbent firms' marketing mix responses to liberalization.

Addressing this research gap, we theorize and find that the market knowledge of incumbent firms influences their marketing mix responses to liberalization. We exploit a quasi-experiment, the liberalization of the Indian economy in 1991, to causally identify the effects of liberalization on incumbent firms. We conclude with a discussion of the findings' contributions to theory, implications for managerial practice, and the limitations and opportunities for further research.

1.6.1 Theoretical Contributions

To the best of our knowledge, this is the first study to examine the marketing mix responses of incumbent firms to liberalization. Through this study, we contribute to the marketing literature on competitive response, which has thus far, focused on domestic competition (Ailawadi et al. 2010; Mukherji et al. 2011). Prior research on domestic competition suggests that no marketing response maybe the most common response for incumbent firms (Steenkamp et al. 2005; Ailawadi et al. 2010). However, by studying a new type of competition, this study's findings indicate that incumbent firms do respond aggressively through their marketing to liberalization that, in turn, affects their performance.

Second, through our study, we extend the literature on marketing mix responses and liberalization in a novel way. Extant research has focused on incumbent firms' size and financial capacity as drivers of their response and performance during domestic competition and liberalization (Ailawadi et al. 2010, Zhang et al. 2010, Mukherji et al. 2011), but has ignored incumbent firms' knowledge, a formidable source of competitive advantage. We show that incumbent firms' knowledge can help explain the marketing mix responses of incumbent firms

to liberalization, and subsequent performance. We examine two different types of market knowledge – domestic market knowledge and foreign market knowledge. Our findings demonstrate that different types of knowledge, including domestic market knowledge and foreign market knowledge, differentially affect both incumbent firms' marketing mix responses and performance following liberalization. Thus, through our study we add a new angle to the literature on liberalization and competitive response, demonstrating that incumbent firms' knowledge must be accounted for when studying the effects of competition.

Third, much of the marketing literature has focused on the effect of advertising and R&D on firm performance (Srinivasan, Lilien, and Sridhar 2011). By studying the effect of four different types of marketing – advertising, product mix, promotions, and distribution on firm performance, we contribute to the literature on the effects of marketing mix elements. Extant studies on marketing mix responses primarily examine a single marketing variable such as advertising or product mix (Mukherji et al. 2011), or study industry specific marketing mix responses, such as product assortment in the retailing industry (Ailawadi et al. 2010). By studying all 4P's of the marketing mix, we are able to more comprehensively understand, and develop a fuller picture of incumbent firms' marketing mix responses to competition.

Finally, through our study, we contribute to the international business and economics literature, where there is mixed evidence on the effects of liberalization on incumbent firms' performance (e.g., Aitken and Harrison 1999; Kosová 2010). By demonstrating that incumbent firms respond through their marketing to liberalization, which in turn, affects their performance, we help clarify the mixed evidence on the effects of liberalization on incumbent firms. Specifically, while some incumbent firms benefit by intensifying marketing mix responses to liberalization, others benefit by de-intensifying certain marketing mix responses. Thus, through

our study, we add a new angle to the literature on liberalization, demonstrating that incumbent firms' marketing mix responses are a key determinant of their performance that must be accounted for when studying the effects of liberalization on incumbent firms.

1.6.2 Managerial Implications

The findings have implications for managers of incumbent firms facing liberalization, managers of foreign entrants, policymakers, and investors.

1.6.2.1 Managers of Incumbent Firms

Managers of incumbent firms are very concerned about the effects of liberalization on the performance of their firms. For example, in response to potential liberalization of the retail sector in India, Kishore Biyani (chief executive of the largest incumbent retailer in India), stated in opposition to the reform, "the retail sector…should not be given away to the foreign players while it is too young to compete on a level-playing field." (Chari and Raghavan 2012). More recently, founders of incumbent Indian technology startups, who have been fiercely battling Western entrants including Amazon and Uber, have argued that foreign competitors destroy domestic industry and the Indian government should introduce protectionist measures (Punit 2016). Our findings offer a means by which managers of incumbent firms can effectively compete with foreign competitors following liberalization, i.e., adjusting their marketing mix responses.

Our findings suggest that incumbent firms with greater domestic market knowledge should intensify their distribution in response to liberalization. Their existing knowledge of domestic distribution networks and trade partners is a strong advantage for these firms, which they should exploit by intensifying their distribution to achieve strong performance following liberalization. While incumbent firms with greater domestic market knowledge intensify their

advertising, product mix, and promotions responses to liberalization, the findings of the performance model indicate that they do not benefit from these responses. Thus, these incumbent firms can reallocate their resources on these marketing elements to improve performance.

Further, our findings suggest that incumbent firms with greater foreign market knowledge cut back on their promotions and distribution in response to liberalization. A potential reason for this may be that these incumbent firms are aware of the strength of foreign firms with respect to building intangible assets through advertising and product introduction, and thus may consider their spending on promotions and distribution to be superfluous in combating these entrants. However, our findings from the performance model suggest that while cutting back on their distribution is an appropriate response to liberalization for incumbent firms with greater foreign market knowledge, these firms can further improve their performance by intensifying their promotions. Finally, these incumbent firms do not respond through their advertising and product mix to liberalization, which is the appropriate strategy, as intensifying these marketing elements does not improve performance for these firms.

We quantify the effects of incumbent firms changing their marketing mix responses (based on the estimation results) on their performance, and present them in Table E1 of Appendix E. These estimates suggest that following liberalization, incumbent firms can improve their profitability by as much as 30% by changing their marketing mix responses.

1.6.2.2 Managers of Foreign Entrants

Managers of foreign firms entering newly liberalized markets can use this research's findings to benchmark themselves against incumbent competitors, and understand their potential marketing mix responses. For example, for foreign firms entering a market following

liberalization, incumbent firms with greater domestic market knowledge and foreign market knowledge with appropriate marketing mix responses are likely to emerge as strong competitors.

1.6.2.3 Policymakers

Policymakers may be tempted to heed the demands of business leaders to raise barriers to protect domestic firms from foreign competitors. For example, in response to the Indian government's move to open up the aviation sector to foreign players, Ajay Singh [Chairman of one India's largest aviation incumbents] stated, "…we believe the ultimate objective of policy should be to strengthen indigenous aviation….we believe work needs to be done by the government to ensure that we keep strengthening indigenous aviation…making sure the growth remains profitable growth in the country" (Jha 2016). Our study identifies marketing mix responses as a means to prevent the crowding out of domestic incumbent firms following liberalization. Policymakers need not accede to the demands of incumbent business leaders to heighten protectionist barriers, but can find ways to facilitate incumbent firms' learning from foreign entrants including for example, through alliances and trade associations.

1.6.2.4 Investors

Our findings suggest that the marketing mix responses of incumbent firms play an important role in their performance during liberalization. Thus, institutional investors should consider the marketing mix responses of incumbent firms, while deciding targets of investment. Our findings show that when markets liberalize, incumbent firms with greater domestic market knowledge and foreign market knowledge who adjust their marketing mix responses achieve superior performance, suggesting attractive opportunities for investors in newly liberalized sectors.

1.6.3 Limitations and Opportunities for Further Research

Our study has some limitations that offer opportunities for further research. First, to gain an understanding of the complex phenomenon of liberalization, we focus on the effects of liberalization on incumbent firms. Future research on the responses and performance of incumbent firms during other forms of liberalization, including trade liberalization will be useful.

Second, we study two factors (domestic market knowledge and foreign market knowledge) that affect incumbent firms' marketing mix responses and performance following liberalization. Future research on other factors including Chief Executive Officer's and marketing leadership's foreign education or work experience, family ownership, the motivation of foreign entrants, employee salaries, mergers and acquisitions, and tangible and intangible government incentives will be useful. In addition, while we examine incumbent firms' product mix, because of the lack of data availability, we are unable to study the effects of liberalization on incumbent firms' product innovativeness and quality, which emerges as an area for future research.

Third, we examine the marketing mix responses of incumbent firms to liberalization in a single market, India. While this enables a clean test of the effects of liberalization on incumbent firms, future research could study liberalization in other markets to examine whether our findings generalize to other markets including, for example, the United States, Brazil, and China.

To conclude, the findings of this first study on the role of incumbent firms' marketing during liberalization provide novel insights on incumbent firms' marketing mix responses to liberalization, and the resultant performance implications. Given the increasing pace of economic liberalization in markets around the world, we hope that our study stimulates additional work in this area.

Chapter 2: Forced to do Good: Firms' CSR History, CSR Mandates, and Shareholder Value

2.1 INTRODUCTION

There is a growing consensus that the lack of environmental sustainability, increasing inequity, and continuous decline in societal trust pose a threat to 'business as usual' (Bénabou and Tirole 2010). This has increased societal demands for corporate social responsibility (CSR) initiatives on the part of firms. While firms' CSR initiatives are, for the most part, voluntary and government intervention in CSR initiatives may seem antithetical, in an attempt to achieve inclusive development, some governments (e.g., China, India, and the United Kingdom) have enacted policies to encourage firms to engage in CSR initiatives and even, are going so far as to mandate firm CSR spending (Knudsen and Brown 2015). A priori, we know little about the effects of such government mandates related to CSR spending on firms' responses and performance (Balch 2016), the issue we focus on in this research.

On the one hand, some firms may view a CSR mandate as a tax or the cost of doing business, believing that it increases costs and decreases performance. On the other hand, firms may welcome CSR mandates if they can strategically respond to these mandates, and use their CSR activities to increase goodwill and brand equity, and thus, improve their performance. A key factor that may determine the firm's position on CSR mandates is their existing CSR policies (Seervai 2014). Hence, we propose that firms' prior CSR experience will influence their responses to CSR mandates.

From a theoretical perspective, marketing scholars have examined the effects of mandates on firms' responses and performance (Moorman, Ferraro, and Huber 2012; Gielens et al. 2018). Studying firm responses to the Nutrition Labelling and Education Act (NLEA), Moorman et al. (2012) document considerable heterogeneity in firms' responses based on market share,

category, and brand characteristics. Examining the effects of a sustainability mandate enforced by Walmart on its suppliers, recently, Gielens et al. (2018) find that most of the shareholder value gains from the mandate are appropriated by Walmart, with negative consequences for suppliers' shareholder value.

Developments in the marketing literature on CSR indicate that the effects of CSR activities on firm performance are contingent on complementary advertising and R&D spending (Luo and Bhattacharya 2009) and marketing capabilities (Mishra and Modi 2016). Our review of the literature indicates that, for the most part, extant studies in the CSR area, focus on firms' voluntary CSR activities and have overlooked the effects of CSR mandates on firm performance. The only study to examine government-enforced CSR mandates, Manchiraju and Rajagopal (2017), finds that CSR mandates have a negative effect on firms' shareholder value, except for those firms who have high advertising spending.

However, our review of the literature indicates that three important aspects as they relate to CSR mandates have been overlooked, offering an opportunity for research that we address. First, differences in firms' prior CSR spending may influence the effects of a CSR mandate on their performance. Second, the actual CSR spending of firms in response to the CSR mandate, which represents new information, based on which investors will update their expectations of future firm performance (Ioannou and Serafeim 2017), may also play a role in determining firms' performance following the mandate. Thus, firms' actual CSR spending responses following the mandate need to be accounted for (not examined in Manchiraju and Rajagopal (2017)). Third, also overlooked are the potential role of complementary characteristics in determining the effect of CSR mandates on firm performance (Mishra and Modi 2016).

Accordingly, in this research, we examine the effects of CSR mandates on firms' CSR spending responses, and in turn, the effects of mandated CSR spending on firm performance. First, we study the differential effects of an increase in mandated CSR spending for firms already spending on CSR at the time of the CSR mandate (already-compliers) and firms who spend on CSR for the first time following the mandate (first-time compliers) on firm performance. Second, we examine how other firm characteristics, including agency concerns (i.e. business group affiliation and employee stock ownership) and marketing spending (on advertising, R&D, distribution, and promotion) moderate the relationship between mandated CSR spending and firm performance.

The findings of this study are also managerially relevant. Despite governments' reassurance about the benefits of CSR mandates, not all firms appear to be convinced about the value of responding to these mandates. As more firms start spending on CSR following a mandate, any competitive advantage from a given firm's CSR spending may no longer be available to it. As a sustainability director of a firm with a long tradition of CSR activities stated with respect to such mandates, "Charitable giving used to be a big reputation builder for us, now it's just about legal compliance." (Balch 2016). Hence, these firms may view CSR mandates as just another way for governments to extract hard-earned profits from them in lieu of corporate taxation. Consistent with these arguments (Economic Times, 2013), some corporate leaders have voiced their fears about the benefits of mandated CSR spending. Thus, the research's insights may be useful to senior managers and policymakers about the consequences, intended and unintended, of mandating CSR spending.

Our main thesis is that the effect of mandated CSR spending on shareholder value will be different for already-compliers and first-time compliers. We use the two dominant theoretical

narratives in the CSR literature, agency theory and the resource based view (RBV), to draw our moderators – specifically, firms' mechanisms to resolve agency concerns and their marketing spending, a key source of resources for firms. We combine developments in agency theory and RBV, to understand the differential effects of mandated CSR spending on the shareholder value of already-compliers and first-time compliers.

We exploit a natural experiment in India to examine the effects of mandated CSR spending on firms' shareholder value. In 2013, the Indian government passed a law mandating that all firms which crossed a given threshold of either net worth, sales, or net profit should spend 2% of the average of previous three year's profits on CSR initiatives. This regulation offers a source of exogenous variation that enables identification of the effect of mandated CSR spending on firm performance. To further account for endogeneity, we use the control function estimation. Our sample for estimation includes 702 already-compliers (2,110 firm-years) and 782 first-time compliers (2,125 firm-years) between 2013 and 2016. We measure shareholder value using a firm's market capitalization, thus avoiding any potential confounds from accounting measures (Bendle and Butt 2018).

Our results indicate that on average, increased CSR spending following the mandate increases shareholder value for already-compliers. The empirical evidence supports heterogeneity in the effect of the CSR mandate on firms' shareholder value. Following the mandate, an increase in CSR spending increases shareholder value for already-compliers with mechanisms to resolve agency concerns and increased advertising and R&D spending. For first-time compliers, an increase in CSR spending following the mandate increases shareholder value when combined with increased advertising and R&D spending, and decreases shareholder value when combined with increased promotions spending.

The study's findings make three novel contributions to the marketing literature. First, we contribute to the marketing literature related to policy which has, thus far, looked at the effects of nutrition labelling mandates (Moorman et al. 2012), sales taxes (Anderson et al. 2010), and retailer enforced sustainability mandates (Gielens et al. 2018) on firm behavior and performance, by studying a mandate related to firms' social responsibilities. In doing so, we demonstrate that firms' prior CSR behavior has important consequences for their performance following a CSR mandate.

Second, we contribute to the CSR literature in marketing, by examining the effects of CSR spending on firm performance. In doing so, we extend the literature on the effect of corporate social performance (CSP) on firm performance (Luo and Bhattacharya 2006; Luo and Bhattacharya 2009; Mishra and Modi 2016), the primary focus of extant empirical research. In accordance with extant research on CSP, our findings suggest that increasing CSR spending with advertising and R&D spending can improve shareholder value for all firms. In a novel extension to prior work, our findings indicate that firms' prior CSR spending, mechanisms to resolve agency concerns, and other marketing spending can enhance or detract from the effects of their mandated CSR spending on shareholder value.

Third, we contribute to the literature on the positive effects of mandates on firm performance (Porter and van Linde 1995). The extant literature on mandates related to CSR spending (Manchiraju and Rajagopal 2017) suggests that the effects of these mandates on firms' performance are negative. We overturn this finding by demonstrating that once firms' prior CSR spending and responses to the mandate are accounted for, CSR mandates can have a positive effect on firm performance.

2.2 THEORY AND HYPOTHESES

Across mandates, scholars (Moorman, Ferraro, and Huber 2012; Ahern and Dittmar 2012) report considerable heterogeneity in firms' responses and the corresponding effects of mandates on performance. Examining firms' responses to the NLEA, Moorman, Ferraro, and Huber (2012) find that firms with low market share in a category improved their products' nutrition levels in response to the mandate, while those with high market share reduced their products' nutrition levels. Similarly, studying a regulation mandating corporate diversity in Norway, Ahern and Dittmar (2012) find that the effect of mandated female board representation on firms' shareholder value varies depending on whether they had voluntarily complied with the mandate in the past (i.e. already had 40% requisite female board representation). Thus, firms' actions prior to the introduction of mandates appear to affect their responses and subsequent performance following the mandate. In the context of CSR mandates, some firms have already been spending on CSR activities when a mandate is introduced (already-compliers), while others will be spending on CSR activities for the first time (first-time compliers). We first discuss the effects of mandating CSR spending on the shareholder value of already-compliers and first-time compliers, following which we develop hypotheses of the interaction effects.

2.2.1 Already-compliers

Prior to the mandate, already-compliers may have been spending on CSR activities for two reasons. First, managers of already-compliers may have been spending on CSR activities which further their social, political, and career agendas, but do not necessarily improve their firms' shareholder value (Kruger 2015). Second, firms may have been spending on CSR to generate reputational capital by increasing brand equity and signaling product differentiation, thus achieving competitive advantage (Hoeffler and Keller 2002). Consumers and investors may

attribute altruistic motivations (Berry, Burton, and Howlett 2018) to already-compliers' CSR spending as they have been voluntarily spending on CSR before the mandate, and thus may be positively disposed toward these firms. Further, as already-compliers have prior experience in CSR activities, they may be well-poised to generate superior reputational capital through their CSR spending, and thus, may increase CSR spending beyond the mandated level to further differentiate themselves (Kitzmueller and Shimshack 2011), which should, ceteris paribus, increase shareholder value.

At the same time, a CSR mandate will increase the number of firms spending on CSR activities, which, in turn, may increase consumers' and investors' scrutiny of firms' CSR activities, motivating all firms to increase their CSR spending. With more firms spending on CSR, firms might find their brands "lost in the shuffle", lowering the impact of their CSR activities. As more firms engage in CSR activities, the opportunities to create perceived differential advantage through increased CSR spending will lessen (Hoeffler and Keller 2002). Ultimately, CSR spending might become necessary to just create points of parity to match or negate the CSR spending of rival firms. This suggests that a CSR mandate may make it more difficult for already-compliers to achieve reputational capital and increase shareholder value through CSR spending than in the past. Thus, for already-compliers, there may be both positive and negative effects of an increase in mandated CSR spending on shareholder value.

2.2.2 First-time Compliers

Following the mandate, by definition, many firms will be forced to spend on CSR activities for the first time. These firms may spend on CSR activities which are symbolic but not substantive in nature (Marquis and Qian 2013), engaging in symbolic compliance with the governmental mandate without engaging in CSR activities that are truly effective. Further, first-

time compliers may have little experience with CSR activities, and thus, may be less effective at generating reputational capital through their mandated CSR spending. Finally, consumers and investors may not be positively disposed toward first-time compliers if they believe these firms are mandatorily spending on CSR, as a result of which, their CSR activities may be perceived as forced and insincere (Groza, Pronschinske, and Walker 2011). At the same time, mandated CSR spending represents an opportunity for first-time compliers to build brand equity and signal product differentiation through their CSR activities (Luo and Bhattacharya 2006). Again, a priori, we anticipate both negative and positive effects of an increase in mandated CSR spending on shareholder value for first-time compliers.

2.2.3 Agency Theory, Marketing Spending, and CSR Mandates

As mandated CSR spending can have both positive and negative effects for already-compliers and first-time compliers, we propose a contingency framework that explains when firms are most likely to reap the benefits or dampen the costs of CSR spending, as a consequence of the CSR mandate. Two key theories have been used to examine the relationship between CSR activities and firm performance - agency theory (Jensen and Meckling 1976; Friedman 1970; Ferrell, Liang, and Renneboog 2016) and the resource-based view (RBV) (Barney 1991; Mishra and Modi 2016).

Agency theory contends that, as agents of the firm's shareholders (i.e. principals), managers enjoy informational advantages over their principals, which they can use for their personal gains (Jensen and Meckling 1976). This, in turn, may lead to a conflict in goals between managers and shareholders which must be minimized through monitoring and contracts (Bergen, Dutta, and Walker 1992). Some scholars (e.g., Friedman 1970; Kruger 2015; Ferrell, Liang, and Renneboog 2016) have argued that CSR spending represents the diversion of scarce firm resources by

managers as agents toward unproductive activities. Often, it is difficult for shareholders to verify and evaluate the performance outcomes of a firm's CSR activities. In the presence of agency concerns, managers may spend on CSR activities that elevate their personal status, but which may not necessarily improve shareholder value (Barnett 2007). Thus, agency theory predicts that to increase shareholder value through their CSR spending, firms should resolve agency concerns. Two mechanisms to resolve agency concerns in firms include monitoring and contracting. Accordingly, we examine two means of resolving agency concerns in firms, business group affiliation (monitoring) and employee stock options (contracting).

The RBV of the firm contends that a firm's CSR spending can build consumer-based brand equity through increased brand awareness, brand image, and brand engagement (Hoeffler and Keller 2002), creating a positioning advantage resulting in an intangible asset. Through improved brand equity, a firm's CSR spending can also generate purchase intentions among its consumers, increasing sales (Sen and Bhattacharya 2001). Further, CSR spending does not increase shareholder value in isolation, but only when combined with complementary marketing resources (Mishra and Modi 2016). A firm's marketing spending which creates resources, can be either long-term or short-term oriented (van Waterschoot and van den Bulte 1992). We characterize those types of marketing spending as long-term which build resources for the firms through intangible assets including superior brand equity, technologies, and channel relationships, and those as short-term which generates sales for the firm immediately, but do not necessarily generate assets for the firm in the long-term. Extant marketing literature (Keller 1993) suggests that a firm's advertising spending builds intangible assets through brand equity (Rao, Agarwal, and Dahloff 2004), its R&D spending builds intangible assets through technology (Griliches 1991), and its distribution spending builds intangible assets through

channel relationships (Srinivasan 2006). However, a firm's promotion spending can generate sales for the firm immediately, but may not contribute to the creation of intangible assets (Pauwels et al. 2004). We examine the interaction effects of four types of marketing spending with mandated CSR spending – three of which are long-term oriented (advertising, R&D, and distribution), and one which is short-term oriented (promotions), in nature.

In sum, we combine developments in agency theory and the RBV of the firm, to understand the differential effects of mandated CSR spending on the shareholder value of already-compliers and first-time compliers. See Figure 2.1 for the conceptual framework. We next discuss the interaction effects of the relationship between firms' mandated CSR spending and shareholder value.

----Insert Figure 2.1 around here----

2.2.4 Mandated CSR Spending and Agency Concerns

Monitoring and contracting to resolve agency concerns will positively influence the relationship between a firm's mandated CSR spending and shareholder value. However, we argue that this relationship will hold for already-compliers, but not for first-time compliers. First, already-compliers initiated their CSR spending in a regime where CSR spending was not mandated. Thus, investors may perceive that already-compliers with agency concerns initiated CSR spending so managers could spend on philanthropic activities that bring them personal gains, by furthering their own social, political, or career agendas, and not to improve shareholder value (Aupperle, Carroll, and Hatfield 1985). In contrast, investors may not perceive agency concerns as decreasing shareholder value for first-time compliers as they initiated CSR spending in response to the mandate and not as a consequence of managers' personal preferences.

Second, when already-compliers initiated CSR spending, the information environment surrounding firms' CSR activities, including analysts' and investors' evaluation of firms' CSR activities, may have been much less sophisticated, enabling wasteful spending in already-compliers with agency concerns. The wasteful CSR routines that already-compliers developed previously may persist in the regime of mandated CSR, because of inertia (Nelson and Winter 1982), decreasing shareholder value. In contrast, first-time compliers begin their CSR spending in a sophisticated information environment, in which there is increased scrutiny of their CSR activities following the mandate (Ioannou and Serafeim 2017), and thus are likely to develop more efficient CSR routines irrespective of the presence of agency concerns. We next discuss two means by which already-compliers can resolve agency concerns through monitoring (business group affiliation) and contracting (employee stock options).

Business group affiliation. Business groups are sets of legally independent firms linked by formal and informal network ties (Khanna and Rivkin 2001). One mechanism to resolve agency concerns is through concentrated ownership, as present in business groups, where owners retain control of each firm affiliated with the business group, and may be better able to monitor self-serving managers (Morck and Yeung 2003), mitigating agency concerns (Jensen and Meckling 1976). When agency concerns are mitigated through improved monitoring, managers may be more likely to spend on CSR activities that can generate reputational capital for the firm, as opposed to CSR activities that further their personal agendas, increasing shareholder value. Thus, we hypothesize,

$H_{1\,(AC)}$: For already-compliers affiliated with a business group, an increase in CSR spending following the mandate increases shareholder value.

Employee stock options. Theorists have long identified low levels of managerial stock ownership as symptomatic of agency concerns (Yermack 1995). Increasing the ownership levels of employees in the firm is an explicit contract to align the interests of employees with those of shareholders, ensuring that employees do not use their informational advantages to divert funds toward unproductive activities (Oyer and Schaefer 2005). When their interests are aligned with shareholders through stock options, managers may be more likely to direct the firm's CSR spending toward activities that can generate reputational capital, increasing shareholder value. Thus, we hypothesize,

$H_{2\,(AC)}$: For already-compliers, as the proportion of employee stock options increases, an increase in CSR spending following the mandate increases shareholder value.

2.2.5 Mandated CSR Spending and Long-term Oriented Marketing Spending

We consider three types of long-term oriented marketing spending– advertising, R&D, and distribution, which build the market based assets of branding (Rao, Agarwal, and Dahloff 2004), technology (Griliches 1991), and channels (Srinivasan 2006), respectively.

A priori, we expect that long-term oriented marketing spending can help both already-compliers and first-timers increase shareholder value through their mandated CSR spending. A firm's CSR spending is also long-term oriented in nature, building superior reputation for the firm and relationships with key stakeholders including consumers over time. Thus, there are likely to be complementarities between a firms' CSR spending and other long-term oriented marketing spending, which we further discuss below. Given the increased competition in the domain of CSR following the mandate, to solidify their competitive advantage through CSR spending, investors may perceive that already-compliers should increase long-term oriented marketing spending. Similarly, given first-time compliers' lack of CSR experience, they are

likely to have the greatest chance of generating reputational capital when their CSR activities are combined with increased long-term oriented marketing spending.

Advertising spending can help a firm create brand assets, increasing consumers' and investors' awareness of its CSR activities, generating positive attitudes. Further, advertising can not only inform the firm's stakeholders about its socially responsible operations and core values, but also keep such information salient in their minds, which, in turn, can improve sales, profit, and the liquidity of the firm's stock, increasing shareholder value (Luo and Bhattacharya 2009). Thus, we hypothesize,

$H_{3\,(AC)}$: For already-compliers, as advertising spending increases, an increase in CSR spending following the mandate increases shareholder value.

$H_{3\,(FC)}$: For first-time compliers, as advertising spending increases, an increase in CSR spending following the mandate increases shareholder value.

R&D spending can help firms generate technology assets, and in turn more product and process innovations, which can help them generate greater reputational capital through their CSR activities, by better satisfying emerging consumer needs (Luo and Bhattacharya 2006). Further, for firms who decrease or hold steady their R&D spending, increased CSR spending may cause attributions of misguided firm priorities amongst investors (Luo and Bhattacharya 2009), as CSR activities can generate negative attributions when accompanied by poor product quality resulting from cuts in R&D spending (Luo and Bhattacharya 2006). Thus, we hypothesize,

$H_{4\,(AC)}$: For already-compliers, as R&D spending increases, an increase in CSR spending following the mandate increases shareholder value.

$H_{4\,(FC)}$: For first-time compliers, as R&D spending increases, an increase in CSR spending following the mandate increases shareholder value.

CSR spending can help a firm generate trust and identification with its channel partners (Homburg, Stierl, and Bornemann 2013), which it can leverage using increased distribution spending. Further, to take advantage of the positive brand associations and purchase intentions resulting from CSR activities, firms may need to ensure that their products are readily accessible to consumers, through increased distribution spending. Thus, we hypothesize,

$H_{5\,(AC)}$: For already-compliers, as distribution spending increases, an increase in CSR spending following the mandate increases shareholder value.

$H_{5\,(FC)}$: For first-time compliers, as distribution spending increases, an increase in CSR spending following the mandate increases shareholder value.

2.2.6 Mandated CSR Spending and Short-term Oriented Marketing Spending

We next consider promotion spending, which is short-term oriented in nature. While promotions can induce sales, removing consumers' barriers to action and spurring immediate purchase, frequent promotions can induce perceptions of poor brand quality (Raghubir and Corfman 1999), decreasing brand equity and brand loyalty (Yoo et al. 2000). Some evidence suggests that, up to certain levels, promotions can amplify the sales effects of CSR spending (Andrews et al. 2014). We next discuss the effects of promotion spending on the relationship between mandated CSR spending and shareholder value for already-compliers, followed by for first-time compliers.

Already-compliers. Consumers and investors may be more positively disposed toward already-compliers if they believe these firms voluntarily (Berry, Burton, and Howlett 2018) spent on CSR activities in the past. Further, already-compliers may have generated brand equity through their prior CSR activities, and have experience in generating reputational capital through their CSR spending, and thus maybe insulated from the negative effects of promotions on their

brand equity. Hence, already-compliers may be able to leverage their increased CSR spending through increased promotion spending, improving shareholder value. Thus, we hypothesize,

$H_{6\,(AC)}$: For already-compliers, as promotion spending increases, an increase in CSR spending following the mandate increases shareholder value.

First-time compliers. In contrast to already-compliers, first-time compliers have not built reputational capital with consumers and investors through their past CSR activities. Further, first-time compliers may not have the requisite experience to generate reputational capital through their CSR spending. As noted above, first-time compliers' CSR spending may be perceived by consumers as forced and insincere (Groza et al. 2011). Thus, first-time compliers may not possess sufficient reputational capital to remain insulated from the negative perceptions generated by increased promotion spending. For these reasons, if first-time compliers increase promotion spending in conjunction with mandated CSR spending, investors may perceive that their brand equity and brand loyalty may suffer, decreasing future sales, and profits, and in turn shareholder value. Thus, we hypothesize,

$H_{6\,(FC)}$: For first-time compliers, as promotion spending increases, an increase in CSR spending following the mandate decreases shareholder value.

In summary, we expect mechanisms to resolve agency concerns to positively moderate the relationship between mandated CSR spending and shareholder value for already-compliers (but not for first-time compliers), long-term oriented marketing spending to positively moderate the relationship between mandated CSR spending and shareholder value for both already-compliers and first-time compliers, and short-term oriented marketing spending to moderate the relationship between mandated CSR spending and shareholder value positively (negatively) for already-compliers (first-time compliers). We provide a summary of the hypotheses in Table 2.1.

----Insert Table 2.1 here----

2.3 DATA AND METHOD

2.3.1 Empirical Context: CSR Spending Mandate in India in 2013

We exploit a novel mandate directing firms to spend on CSR activities to study the effects of mandated CSR spending on their shareholder value. On August 29, 2013, the Indian government enacted the Companies Act of 2013. A distinctive feature of this legislation was Section 135, stating that, "every company having net worth of rupees five hundred crore or more, or turnover of rupees one thousand crore or more or a net profit of rupees five crore or more during any financial year shall ensure that the company spends, in every financial year, at least two per cent of the average net profits of the company made during the three immediately preceding financial years, in pursuance of its Corporate Social Responsibility policy." We include further details of Section 135 of the Companies Act in Appendix F.

Firms above the threshold(s) in the Act were required to either comply with the requirements of Section 135, or explain why they did not do so. While there was no penalty for a firm not spending on CSR activities, the firm's officers were liable to specify reasons for non-compliance in the firm's annual report of the Board of Directors, as is common in mandates related to sustainability (Ioannou and Serrafeim 2017).

When the Indian Companies Act of 2013 including the CSR mandate was introduced, some firms were already spending voluntarily on CSR activities. In Table 2.2, we provide details of the number of Indian firms (affected by the CSR mandate) who changed their CSR spending following the mandate. In 2014, of the 1,465 (affected) firms who were already spending on CSR activities, following the mandate, 785 firms and 543 firms increased and decreased CSR spending respectively, and 137 firms did not change their CSR spending. Of the 5,763 (affected)

firms who had never spent on CSR activities, following the mandate, 1,419 firms increased CSR spending, while 4,344 firms did not do so. Thus, there is considerable heterogeneity in firms' CSR spending in response to the mandate.

----Insert Table 2.2 here----

2.3.2 Data

We use data on publicly-listed Indian firms from the Prowess Database of the Centre for Monitoring Indian Economy (CMIE), which has been used in past research to study firm performance in emerging markets (Banerjee, Prabhu, and Chandy 2015). CMIE is an independent think-tank that collects data on Indian firms, the main sources of data for CMIE include annual reports of firms, regulators, and stock exchanges. The firms in the Prowess database account for 75% of all corporate taxes and more than 95% of excise duties collected by the Indian government.

We collect data on firms' spending on CSR, advertising, R&D, distribution, and promotions. In addition, we collect data on firms' market capitalization on the Bombay Stock Exchange (BSE), net worth, total assets, total sales, net profit, profit before interest, taxes, depreciation and amortization (EBITDA), business group affiliation, and proportion of employee stock option pay in firms' total employee compensation. Our data spans the period from 2013 to 2016. We provide the constructs, measures, and data sources in Table 2.3.

---- Insert Table 2.3 here ----

2.3.3 Measures

Shareholder Value. To ensure that our measure of shareholder value is comparable across industries and is un-confounded by the presence of accounting measures which differ based on

industry norms (Bendle and Butt 2018), we use a firm's market capitalization to operationalize its shareholder value.

CSR. CSR spending in the Prowess database is reported under three heads—donations, social and community expenses, and environment related expenses, which we combine to compute a firm's CSR spending (*CSR*). We provide the description of each type of CSR spending from the Prowess database in Appendix G. To exclude potential scale effects of firm size, we divide a firm's CSR spending by its total assets.

Resolving Agency Concerns. We operationalize a firm's business group affiliation *(BGROUP)* using an indicator variable (1 if a firm is affiliated to a business group, 0 otherwise). The SEBI (Securities and Exchange Board of India) defines employee stock options as "an option given to employees offering them the benefit of/right to purchase or subscribe to, at a future date, securities offered by the company at a predetermined price." We operationalize employee stock options (*ESOP*) as the ratio of the firm's employee stock options granted during the year to the total employee compensation.

Long-term Oriented Marketing Spending. The firm's advertising (*ADV*) represents its spending on paid media, which we scale by the firm's size measured by its total assets. [2] The firm's R&D spending (*R&D*) represents its spending on research and development. Distribution (*DIST*) represents a firm's spending to deliver products to various channel intermediaries including retailers, wholesalers, and distributors.

Short-term Oriented Marketing Spending. The firm's promotions (*PRM*) represents its spending on rebates, discounts, and sales promotions.

[2] For missing values of each type of spending, we impute the value to .0001 before scaling by assets.

Control Variables. We control for a firm's size (*SIZE*) measured by the logarithm of total assets, a firm's profitability (*PRF*) measured by the ratio of earnings before income taxes depreciation and amortization (EBITDA) to total assets, and a firm's sales growth (*SG*), measured by the change in its sales over previous year's sales.

We classify a firm as an already-complier firm if it spent on CSR activities in one or more years in the period from 2010 to 2012. The final sample of already-compliers with data on all variables consists of 2,110 firm-year observations (702 firms). We provide the descriptive statistics and a complete correlation matrix of the key variables for the sample of already-complier firms, winsorized at 1%, in Table 2.4a. If a firm does not disclose CSR spending or has disclosed a CSR spending of 0 in the period between 2010 and 2012, we classify it as a first-time complier. The final sample of first-time compliers with complete data consists of 2,125 firm-year observations (782 firms). We provide the descriptive statistics and a complete correlation matrix of the key variables for the sample of first-timer compliers, winsorized at 1%, in Table 2.4b.

----Insert Table 2.4a and 2.4b here----

2.3.4 Identification Strategy

A key concern for hypotheses testing of the effects of firms' mandated CSR spending on their shareholder value is endogeneity, i.e. that explanatory independent variables of interest may be correlated with the error term. To overcome this potential endogeneity concern, we use the control function approach (Petrin and Train 2010) where we obtain controls for the dependence between the endogenous independent variables and the error term. We do this in two steps. First, we perform an auxiliary estimation with the endogenous variable as the dependent variable and identify an instrumental variable that satisfies the exclusion restriction, i.e. it is correlated with the endogenous independent variable, but not correlated with the unobserved determinants of

shareholder value. The predicted residual from the auxiliary estimation provides a control function correction in the main estimation. By including these controls in the second-stage estimation, we ensure that the endogenous independent variables no longer correlate with the error term mitigating concerns of endogeneity.

We estimate six auxiliary regressions for the six endogenous independent variables, CSR spending, employee stock options, advertising spending, R&D spending, distribution spending, and promotions spending, using the average of all other firms, excluding the focal firm, in the same three-digit NIC (National Industrial Classification) industry as instruments for each endogenous independent variable. There is empirical precedent for using industry average as an instrumental variable (Sridhar et al 2016). We do not estimate an auxiliary regression for business group affiliation as a firm's business group affiliation is determined at its inception, and thus, is not endogenous. We subsequently demonstrate the robustness of the results to using the average of other firms in the same two-digit NIC industry as instruments for the endogenous independent variables. The auxiliary estimations for the first stage of the control function estimation are as follows:

$$CSR_{it} = \alpha_{01i} + \alpha_{11} Industry\ CSR_{-it} + \sigma_{1t} + \mu_{1it} \quad (1)$$

$$ESOP = \alpha_{02i} + \alpha_{12} Industry\ ESOP_{-it} + \sigma_{2t} + \mu_{2it} \quad (2)$$

$$ADV_{it} = \alpha_{03i} + \alpha_{13} Industry\ ADV_{-it} + \sigma_{3t} + \mu_{3it} \quad (3)$$

$$R\&D_{it} = \alpha_{04i} + \alpha_{14} Industry\ R\&D_{-it} + \sigma_{4t} + \mu_{4it} \quad (4)$$

$$DIST_{it} = \alpha_{06i} + \alpha_{16} Industry\ DIST_{-it} + \sigma_{6t} + \mu_{6it} \quad (5)$$

$$PRM_{it} = \alpha_{05i} + \alpha_{15} Industry\ PRM_{-it} + \sigma_{5t} + \mu_{5it} \quad (6)$$

In equation (1), for firm i in period t, the fixed effect α_{01i} represents firm specific heterogeneity in CSR spending, α_{11} represents the effect of industry average CSR spending (excluding the focal firm) on a firm's CSR spending, σ_{1t} represents the year fixed effects, and

μ_{it} is a random error term. The same logic applies to equations (2), (3), (4), (5) and (6), the auxiliary regressions for employee stock options, advertising spending, R&D spending, distribution spending, and promotions spending, respectively.

We present the results for the auxiliary regressions for CSR spending, employee stock options, advertising spending, R&D spending, distribution spending, and promotion spending in Columns 1- 6 respectively of Table H1 in Appendix H. As expected, industry averages excluding the focal firm are a significant predictor of the focal firm's CSR spending ($p<.01$), employee stock options ($p<.01$), advertising spending ($p<.01$), R&D spending ($p<.01$), distribution spending ($p<.01$), and promotions spending ($p<.10$). Thus, our instruments appear to be valid. Further, theoretically, our instrumental variables meet the exclusion restriction as it is unlikely that peer firms' decisions on these variables would relate to the focal firm's omitted variables that affect their shareholder value.

Following this, we estimate the second stage equation with the predicted residuals included from the first stage estimation for already-compliers and first-time compliers,

$$Shareholder\ Value_{it} = \beta_{0i} + \beta_1 CSR_{it} + \beta_2 BGROUP_{it} + \beta_3 ESOP_{it} + \beta_4 ADV_{it} + \beta_5 R\&D_{it} + \beta_6 DIST_{it} + \beta_7 PRM_{it} + \beta_8 (CSR_{it} \times BGROUP_{it}) + \beta_9 (CSR_{it} \times ESOP_{it}) + \beta_{10} (CSR_{it} \times ADV_{it}) + \beta_{11} (CSR_{it} \times R\&D_{it}) + \beta_{12} (CSR_{it} \times DIST_{it}) + \beta_{13} (CSR_{it} \times PRM_{it}) + \beta_{14} Controls_{it} + \beta_{15} \widehat{\vartheta_{it}} + \tau_t + \mu_{it}$$

where β_{0i} refers to the firm fixed effects, τ_t refers to the year fixed effects, $\beta_{8\text{-}13}$ are the coefficients of interest, and β_{14} refers to the coefficients of the control variables, the coefficient vectors β_{15} captures the effect of the six predicted residuals in the vector $\widehat{\vartheta_{it}}$ from the auxiliary

regressions (pertaining to CSR spending, employee stock options, advertising spending, R&D spending, distribution spending, and promotions spending) on shareholder value.

2.4 RESULTS

We first present the results of the estimation of the main effect of mandated CSR spending on shareholder value. Following that, we present the results of the estimation of mandated CSR spending on firm shareholder value, including the hypothesized interaction effects.

In Table 2.5 (Columns 1-2), we present the results of the estimation of the main effect of mandated CSR spending on shareholder value. In Column 1 of Table 2.5, we present the results for the sample of already-compliers, which suggest that an increase in mandated CSR spending significantly increases shareholder value (b = 2.729, $p<.01$). The overall model is significant with an F-statistic of 19.84 ($p<.01$). In Column 2 of Table 2.5, we present the results for the sample of first-time compliers, which indicate that an increase in mandated CSR spending marginally increases shareholder value (b = 1.211, $p<.10$). Again, the overall model is significant with an F-statistic of 10.42 ($p<.01$). Thus, increasing mandated CSR spending increases shareholder value significantly for already-compliers and marginally for first-time compliers.

Tests of Hypotheses. In Table 2.5 (Columns 3-4), we present the full model including all two-way interactions of a firm's mandated CSR spending with the variables in our conceptual framework. In Column 3 of Table 2.5, we present the results for already-compliers. The results marginally support $H_{1(AC)}$, indicating that an increase in mandated CSR spending for already-compliers affiliated with business groups increases shareholder value (b = 3.652, $p<.10$). The results strongly support $H_{2(AC)}$, suggesting that an increase in mandated CSR spending combined

with an increase in contracting through employee stock options for already-compliers increases shareholder value (b = 1.233, *p<.01*).

We find support for $H_{3(AC)}$, as an increase in mandated CSR spending of already-compliers combined with an increase in advertising spending increases shareholder value (b = 1.835, *p<.01*). In addition, we find marginal support for $H_{4(AC)}$, indicating that an increase in mandated CSR spending combined with an increase in R&D spending increases shareholder value (b = 3.869, *p<.10*) for already-compliers. However, we do not find support for $H_{5\,(AC)}$ and $H_{6\,(AC)}$, as neither an increase in distribution spending (b = 1.815, not significant (*n.s.*)) nor promotion spending (b = 3.128, *n.s.*) combined with an increase in mandated CSR spending increases shareholder value. Thus, for already-compliers, an increase in mandated CSR spending combined with mechanisms to resolve agency concerns (business group affiliation and employee stock options) and increased long-term oriented marketing spending (advertising and R&D) increases shareholder value.

In Column 4 of Table 2.5, we present the results for first-time compliers. We find support for $H_{3(FC)}$, as an increase in mandated CSR spending combined with an increase in advertising spending increases shareholder value (b = .822, *p<.05*) for first-time compliers. Similarly, an increase in mandated CSR spending combined with an increase in R&D spending increases shareholder value (b = 3.308, *p<.05*) for first-time compliers, supporting $H_{4(FC)}$. However, we do not find support for $H_{5(FC)}$, as an increase in mandated CSR spending of first-time compliers combined with an increase in distribution spending has no effect on shareholder value (b = 2.772, *n.s.*). In relation to first-time compliers' short-term oriented marketing spending, we find support for $H_{6(FC)}$, suggesting an increase in mandated CSR spending combined with an increase in promotion spending decreases shareholder value (b = -5.327, *p<.05*). Thus, for first-time

compliers, mandated CSR spending along with long-term oriented marketing spending (advertising and R&D) increases shareholder value, but decreases shareholder value along with short-term oriented marketing spending (promotions). We note that for completeness, we estimate and find no support for the moderating relationships related to the resolution of agency concerns (business group affiliation and employee stock options) for first-time compliers.

----Insert Table 2.5 here----

2.4.1 Robustness Analysis

We next discuss the robustness of the results to alternative model specifications, sampling variations, and alternative instrumental variables.

Difference-in-difference analysis. To study the effects of the CSR mandate (exclusive of firms' CSR spending responses) on firms' shareholder value, we carry out a difference-in-difference analysis, using firm-year observations in the period 2010 to 2016. We code the variable *Post* as 1 for firm-year observations belonging to the period 2013-2016, and 0 otherwise. We code the variable *Treat* as 1 if a firm-year observation crosses the threshold for net worth, sales, or net profits mentioned in the Companies Act, 2013, and 0 otherwise. We use a generalized difference-in-differences (including firm fixed effects and year fixed effects), and control for a firm's sales and net profit (scaled by assets), as these variables are used to assign firms' into the treatment condition. Thus, we do not include the previous controls of firm size and profitability, as these are highly correlated with sales and net profits, but continue to control for firms' sales growth. Thus, we estimate the following equation,

$$Shareholder\ Value_{it}$$

$$= \beta_{0i} + \beta_1 Post_{it} + \beta_2 Treat_{it} + \beta_3(Post_{it} \times Treat_{it}) + \beta_4(Treat_{it} \times Moderator_{it}) + \beta_5(Post_{it} \times Moderator_{it}) + \beta_6(Post_{it} \times Treat_{it} \times Moderator_{it}) + \beta_7 Controls_{it} + \tau_t + \mu_{it}$$

where Moderator refers to the six variables - business group affiliation, employee stock options, advertising spending, R&D spending, distribution spending, and promotions spending, β_{0i} refers to the firm fixed effects, τ_t refers to the year fixed effects. To overcome the threat of serially correlated outcomes and ensure that our standard errors are consistent, we cluster them at the firm-level (Bertrand, Duflo, and Mullainathan 2004).

We present the results of the difference-in-differences estimation in Table 2.6. In Column 1 of Table 2.6, we present the results for already-compliers, which are consistent with the results of the control function estimation, indicating that mandated CSR spending increases shareholder value, in the presence of business group affiliation (b = .983, *p<.05*), increased employee stock options (b = .594, *p<.10*), increased advertising spending (b = .772, *p<.01*), and increased R&D spending (b = 2.285 , *p<.01*), thus supporting $H_{1(AC)}$, $H_{2(AC)}$, $H_{3(AC)}$ and $H_{4(AC)}$ respectively.

In Column 2 of Table 2.6, we present the results for first-time compliers, which are consistent with the results of the control function estimation, suggesting that mandated CSR spending increases shareholder value, in the presence of increased advertising spending (b = .283, *p<.01*) and R&D spending (b = .767 , *p<.01*), thus supporting $H_{3\ (FC)}$ and $H_{4\ (FC)}$. We note that the difference-in-difference results do not support $H_{6\ (FC)}$ which the control function estimation does, a potential reason for this discrepancy may be because the control function estimation takes into account firms' CSR spending while the difference-in-differences estimation is centered around whether a firm is mandated to spend on CSR or not.

----Insert Table 2.6 here----

Regression discontinuity. To examine the causal effect of mandated CSR spending on firms' shareholder value, we employ the regression discontinuity (RD) method (Lee 2008). In our empirical context, the RD exploits the exogenous variation among firms who fall on either side of the threshold of net worth, sales, and net profit, above which they have to spend 2% of their profits on CSR activities. Whether firms fall just above or below the threshold is as good as randomly assigned, enabling the identification of the causal effect of mandated CSR spending as in a randomized experiment.

In our context, as there are three running variables which assign firms to the treatment condition (net worth, sales, and net profits), we follow the procedure outlined in Wong, Steiner, and Cook (2013) to estimate multiple RD, using a single assignment variable and cutoff, after excluding all observations that are assigned to the treatment via the other assignment variables. We use sales as the assignment variable and a second-order polynomial to estimate the RD. Identification in an RD occurs because units are randomly allocated around the threshold (Lee and Lemieux 2010), thus, fixed effects estimation is not required to achieve identification. To account for dependence across firm-year observations and for heteroscedasticity, we cluster standard errors at the firm-level.

We present the results of the RD estimation in Table 2.7. In Column 1 of Table 2.7, we present the results for already-compliers, which support $H_{2(AC)}$, $H_{3(AC)}$ and $H4_{(AC)}$, suggesting that an increase in mandated CSR spending increases shareholder value for already-compliers with increased employee stock options (b = 2.814, $p<.01$), increased advertising spending (b = 1.404, $p<.01$) and increased R&D spending (b = 5.063, $p<.01$). In Column 2 of Table 2.7, we present the results for first-time compliers, which support $H_{3(FC)}$ and $H_{4(FC)}$, indicating that an increase in

mandated CSR spending increases shareholder value when combined with increased advertising spending (b = .663, $p<.01$) and increased R&D spending (b = 2.034, $p<.01$).

----Insert Table 2.7 here----

We note that the RD results do not support $H_{1(AC)}$ and $H_{6\,(FC)}$ which the control function estimation does, a potential reason for this discrepancy may be because the control function estimation takes into account firms' CSR spending while the RD estimation, similar to the difference-in-differences estimation, is centered around whether a firm is mandated to spend on CSR or not.

Sampling Variation. To check if our results are robust to sampling variations, we re-estimate our main models after dropping 5% of the observations in the samples of already-compliers and first-time compliers. We report these results in Column 1 and 2 of Table H2 in Appendix H, which support hypotheses $H_{1\text{-}4\,(AC)}$, $H_{3\text{-}4(FC)}$ and $H_{6(FC)}$.

Alternative Instrumental Variables. To demonstrate the robustness of our results to alternative instrumental variables, we re-estimate the two-stage control function by using the average values of all firms (excluding the focal firm) in the firm's two-digit NIC instead of the firm's three-digit NIC to instrument firms' CSR spending, employee stock options, advertising spending, R&D spending, distribution spending, and promotion spending. We report these results in Column 1 and 2 of Table H3 in Appendix H which support hypotheses $H_{1\text{-}4\,(AC)}$, $H_{3\text{-}4(FC)}$ and $H_{6(FC)}$.

Further, we re-estimate the two stages of the control function estimation by including the controls used in the second-stage, firm size, firm profitability, and firm sales growth as controls in the first-stage of the estimation. We report these results in Column 1 and 2 of Table H4 of Appendix H, which support hypotheses $H_{1\text{-}4\,(AC)}$, $H_{3\text{-}4(FC)}$ and $H_{6\,(FC)}$.

2.5 GENERAL DISCUSSION

Financial crises, rising consumer and employee safety concerns, and environmental disasters publicly linked to corporations have led to greater government regulation of CSR initiatives by firms. While some firms welcome government intervention in their CSR activities, other firms vehemently oppose it (Economic Times, 2013), suggesting considerable heterogeneity in the effects of CSR mandates on firm performance. Our study suggests that one factor influencing the effects of mandated CSR spending on firms' shareholder value is their prior CSR spending behavior. Further, agency concerns and marketing spending also influence the effects of mandated CSR spending on firms' shareholder value.

Unlike the classical CSR studies that evaluate firms' voluntary CSR activities (Luo and Bhattacharya 2006; 2009), we study the effect of mandated CSR spending on firms' shareholder value. A priori, it is not clear whether findings on the impact of voluntary CSR activities will transfer to the context of mandated CSR activities (Gielens et al. 2018). We study the differences in voluntary and mandated CSR behavior by examining the differential effect of a CSR mandate on the shareholder value of already-compliers and first-time compliers. To do so, we exploit a mandate by the Indian government requiring firms that cross a given threshold of net profits, revenues, and net worth to spend 2% of their profits on CSR. We conclude by discussing the research's theoretical contributions, implications for managers, policymakers, and investors, and limitations and opportunities for further research.

2.5.1 Theoretical Contributions

Through our study, we make three novel contributions to the literature. First, we contribute to the marketing literature related to mandates which has, thus far, looked at the effects of nutrition labelling mandates (Moorman et al. 2012), sales taxes (Anderson et al. 2010)

and retailers' sustainability mandates (Gielens et al. 2018). Specifically, we extend this literature in two ways. First, we study the effects of a mandate related to firms' social responsibilities, a key aspect of their marketing strategy (Sen and Bhattacharya 2001). In doing so, we shed light on the role of marketing in ensuring firms can respond strategically to CSR mandates. Second, we demonstrate that firms' past CSR behavior has important implications for their responses and performance following the mandate, thus establishing that firms' prior behavior should be taken into account while studying the effects of mandates.

Second, we contribute to the CSR literature in marketing, by examining the effects of CSR spending on firm performance. In doing so, we extend the literature on the effect of corporate social performance (CSP) on firm performance (Luo and Bhattacharya 2006; Luo and Bhattacharya 2009; Mishra and Modi 2016), which has been the primary focus of empirical research in marketing. In addition, by studying the performance of already-compliers and first-time compliers following the CSR mandate, we uncover differences in how investors react to voluntary versus mandated CSR spending. Further, we pioneer an investigation of the interaction between a firm's CSR spending and spending on marketing actions such as promotions and distribution, answering calls for research on how different aspects of marketing contribute to firm performance in conjunction with CSR (Mishra and Modi 2016). Finally, by situating our study in India, we address the calls for research on the link between firms' CSR spending and performance in developing countries (Mishra and Modi 2016).

Third, we contribute to the economics literature on how regulation can be beneficial to firms (Porter and van der Linde 1995). Extant literature suggests that mandating CSR spending can have a negative effect on firm performance (Manchiraju and Rajagopal 2017). We overturn this finding in the literature, by demonstrating that after taking into account the previous CSR

spending behavior of firms, and firms' spending responses, CSR mandates can have a positive effect on firm performance. Thus, counterintuitively, by forcing firms to do good, governments can also ensure that firms do well, increasing value for their shareholders.

2.5.2 Managerial Implications

This research's findings on the consequences of mandated CSR spending for firm performance are novel and have useful implications for managers, policymakers, and investors, which we next discuss.

2.5.2.1 Managers

In a departure from prior research in the area of CSR, which has primarily examined firm CSP (which may not be entirely under managers' control), we study the effects of firms' CSR spending, which can be easily adjusted by managers. Our findings suggest that mandated CSR spending can increase shareholder value for firms under certain circumstances, and thus, managers should view CSR mandates as an opportunity to create value for their shareholders. We next discuss the different strategies, suggested by our findings, for firms to improve their shareholder value through mandated CSR spending. To do so, we perform additional analysis to quantify the effects of our findings for firms' shareholder value. We present the results of this analysis in Table 2.8.

In Panel A of Table 2.8, we quantify the percentage improvements in shareholder value that already-compliers can achieve by following our recommendations. For an already-complier affiliated with a business group, a two standard deviation (SD) in mandated CSR spending can increase shareholder value by 11.36%. Similarly, for already-compliers, a two SD increase in mandated CSR spending combined with a two SD increase in employee stock options,

advertising spending, and R&D spending, increases shareholder value by 15.34%, 15.98%, and 9.63%, respectively.

Similarly, in Panel B of Table 2.8, we quantify the percentage improvements in shareholder value that first-time compliers can achieve based on our recommendations. A two SD increase in mandated CSR spending combined with a two SD increase in advertising spending increases shareholder value by 9.65% for first-time compliers. Similarly, a two SD increase in mandated CSR spending combined with a two SD increase in R&D spending increases first-time compliers' shareholder value by 11.09%, while a two SD increase in mandated CSR spending combined with a two SD decrease in promotion spending increases shareholder value by 10.27%.

----Insert Table 2.8 here----

2.5.2.2 Policymakers

For policymakers, our findings suggest that given appropriate responses and complementary spending, mandated CSR spending can have positive consequences for firms' performance. Thus, by mandating CSR spending, governments can not only achieve inclusive development, but also aid firms in achieving strong performance.

By mandating CSR spending, governments shine a light on firms' CSR behavior, spurring comparisons by investors and other stakeholders, incentivizing firms to compete in the domain of CSR. Our findings suggest that firms who have prior experience executing CSR activities can excel in this environment, increasing their CSR spending to build positive brand equity with their consumers. However, firms who are spending for the first time, may be less likely to benefit from their mandated CSR spending, but can do so by adjusting other

complementary spending. Policymakers can work with firms to ensure that they adjust their mechanisms to resolve agency concerns and marketing spending appropriately, thus, benefitting from their mandated CSR spending. Our findings suggest that mandating CSR spending does not destroy the business rationale to spend on CSR, but instead amplifies it.

2.5.2.3 Investors

For investors, our findings indicate that when buying stocks of firms in markets with mandated CSR spending, they should examine a firm's prior CSR spending (voluntary), its mechanisms to resolve agency concerns, and its marketing spending. In the case of firms who were already spending on CSR activities, investors should prioritize stocks of firms with mechanisms to resolve agency concerns, and those who increase spending on long-term oriented marketing, including advertising and R&D. In the case of firms who are spending for the first time on CSR activities, investors should prioritize stocks of firms who increase spending on long-term oriented marketing activities, including advertising and R&D, and those who decrease spending on short-term oriented marketing activities, including promotions.

2.5.3 Limitations and Opportunities for Further Research

As with all research, our study has some limitations which offer opportunities for further research. First, we look at CSR spending on aggregate. Our data does not allow us to examine the specific CSR initiatives that firms carry out. It is possible that different types of CSR initiatives carried out in response to a mandate may have different effects on the performance of already-compliers and first-time compliers. Future research can examine whether the relationships uncovered in this research hold at the disaggregate level.

Second, our study focuses on the effect of mandatory CSR spending on firm performance, we do not study the social impact of mandatory CSR spending. Future research can

examine whether mandatory CSR spending causes significant improvements in social outcomes, and which initiatives by firms, and which types of firms, are most likely to achieve the required social outcomes.

Third, we do not examine the effect of firms' mandated CSR spending on consumer or investor behavior, we only infer it from the effects on shareholder value. It is likely that studying the effects of mandated CSR on individual consumer and investor behavior might reveal heterogeneity in how consumers and investors respond to firms' mandated CSR spending. Future research can explore these micro foundations of mandated CSR spending.

To conclude, this research on the effects of CSR mandates on firm performance, suggests important consequences of mandated CSR spending for firms. Given the increasing inequality and environmental concerns across the world, we anticipate that an increasing number of firms are likely to be subject to the societal demands of CSR. We hope our study stimulates future work in this area.

Table 1.1: Constructs, Measures, and Data Sources

Construct	Measure	Data source
Dependent Variables		
Advertising	Advertising spending/ Total assets	CMIE Prowess Database
Product mix	Number of products	CMIE Prowess Database
Promotions	Promotion spending/ Total assets	CMIE Prowess Database
Distribution	Distribution spending/ Total assets	CMIE Prowess Database
Independent Variables		
Post	Indicator variable for Pre/Post liberalization event – 1 for observations after 1991, 0 otherwise	CMIE Prowess Database
Liberalization	Indicator variable – 1 if the three digit NIC industry is liberalized in the given year, 0 otherwise	Industrial Policy Resolution of India, 1991
Domestic market knowledge	Indicator variable – 1 if firm belongs to a business group, 0 otherwise	CMIE Prowess Database
Foreign market knowledge	(Foreign exchange spending + Foreign exchange earnings) / Total assets	CMIE Prowess Database
Control Variables		
Firm size	Total assets, lagged	CMIE Prowess Database
Firm profitability	EBITDA/Total Assets, lagged	CMIE Prowess Database
Domestic competition	Industry sum of domestic firms' total sales / Industry sum of all firms' total sales	CMIE Prowess Database

Table 1.2: Descriptive Statistics and Correlation Matrix

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Advertising	.01	.025										
2. Product mix	4.573	4.429	.019**									
3. Promotions	.021	.038	.304***	.014**								
4. Distribution	.026	.040	.184***	.012*	.165***							
5. Post	.894	.308	-.031***	-.084***	-.035***	-.029***						
6. Liberalization	.467	.499	-.041***	.050***	-.018***	-.006	-.056***					
7. Domestic market knowledge	.498	.500	.070***	.228***	.018***	.046***	-.110***	0				
8. Foreign market knowledge	.146	.313	-.020***	.032***	.049***	.232***	-.009**	.040***	.006			
9. Firm size	73.074	396.089	-.056***	.119***	.033***	.006	-.009*	-.077***	.155***	-.027***		
10. Firm profitability	.116	.129	.073***	.021***	.055***	.091***	-.04***	.056***	.042***	.132***	-.013**	
11. Domestic competition	.855	.148	-.146***	-.053***	-.110***	-.016***	.136***	-.123***	-.013***	.012***	.060***	-.014***

**** p<.01, ** p<.05, * p<.1*

Table 1.3: Difference-in-Differences Estimates and Heterogeneous Treatment Effects

Panel A – Difference-in-Differences Estimates without Controls

	(1) Advertising	(2) Product mix	(3) Promotions	(4) Distribution
Post * Liberalization ($*10^{-2}$)	-.045	27.2***	.178**	.215***
	(.060)	(6.470)	(.077)	(.083)
Post ($*10^{-2}$)	-.223**	92.6***	-.373***	-.476***
	(.102)	(12.1)	(.135)	(.145)
Intercept	.011***	3.956***	.024***	.028***
	(.001)	(.111)	(.001)	(.001)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
F-statistic	2.2	77.28	9.64	7.57
Prob<F	p<.01	p<.01	p<.01	p<.01
Observations	19,468	40,526	29,087	25,051
Number of Firms	4,267	7,541	5,648	4,838

*** *p<.01, ** p<.05, * p<.1*

Panel B – Difference-in-differences Estimates with Controls

	(1) Advertising	(2) Product mix	(3) Promotions	(4) Distribution
Post * Liberalization ($*10^{-2}$)	.003	24.7***	.322***	.079
	(.074)	(8.580)	(.097)	(.101)
Post	.004	.493*	-.004	.004
	(.002)	(.264)	(.003)	(.003)
Firm size ($*10^{-4}$)	.001	16.4***	-.004**	-.002
	(.010)	(1.41)	(.002)	(.002)
Firm profitability	.006***	.130	.012***	.015***
	(.001)	(.113)	(.002)	(.002)
Domestic competition	-.001	.045	.001	-.001
	(.001)	(.148)	(.002)	(.002)
Intercept	.005**	4.308***	.021***	.019***
	(.002)	(.262)	(.003)	(.003)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
F-statistic	2.72	53.80	12.54	10.27
Prob>F	.000	.000	.000	.000
Observations	16,633	34,156	24,733	21,208
Number of firms	3,927	7,073	5,243	4,512

*** *p<.01, ** p<.05, * p<.1*

Panel C - Effects of Liberalization on Incumbent Firms' Marketing Mix Responses – Difference-in-differences with Heterogeneous Treatment Effects

	(1) Advertising	(2) Product mix	(3) Promotions	(4) Distribution
Domestic market knowledge * Post * Liberalization	.003**	.323*	.005**	.004*
	(.002)	(.185)	(.002)	(.002)
Foreign market knowledge * Post * Liberalization	.003	-.081	-.008**	-.009***
	(.003)	(.303)	(.003)	(.004)
Foreign market knowledge * Liberalization	-.004	-.100	.003	.013***
	(.003)	(.314)	(.004)	(.004)
Domestic market knowledge * Post	-.002*	-.271*	-.001	-.001
	(.001)	(.142)	(.002)	(.002)
Foreign market knowledge * Post	-.001	.032	.005**	.002
	(.002)	(.212)	(.002)	(.002)
Post * Liberalization	-.003*	.041	.001	-.000
	(.002)	(.163)	(.002)	(.002)
Post	.006**	.681**	-.004	.003
	(.003)	(.286)	(.003)	(.003)
Foreign market knowledge	.003*	.558**	.009***	.015***
	(.002)	(.220)	(.002)	(.002)
Firm size ($*10^{-4}$)	.001	16.4***	-.041**	.001
	(.010)	(1.40)	(.0192)	(.002)
Firm profitability	.006***	.059	.010***	.010***
	(.001)	(.113)	(.002)	(.002)
Domestic competition	-.001	.039	.001	-.001
	(.001)	(.148)	(.002)	(.002)
Intercept	.005**	4.214***	.020***	.016***
	(.002)	(.264)	(.003)	(.003)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
F-statistic	2.68	41.75	20.43	36.85
Prob>F	.000	.000	.000	.000
Observations	16,633	34,156	24,733	21,208
Number of firms	3,927	7,073	5,243	4,512

**** p<.01, ** p<.05, * p<.1*

Table 1.4: Effect of Liberalization on Incumbent firms' Marketing Mix Responses - Summary

	Effect of Liberalization on Marketing Mix Response
Difference-in-differences	
Advertising	No change
Product mix	Increase
Promotions	Increase
Distribution	No change
Heterogeneous Treatment Effects	
Domestic Market Knowledge	
Advertising	Increase
Product mix	Increase
Promotions	Increase
Distribution	Increase
Foreign Market Knowledge	
Advertising	No change
Product mix	No change
Promotions	Decrease
Distribution	Decrease

Table 1.5: Additional Analyses

Panel A – Difference-in-differences with Heterogeneous Treatment Effects – Control for Reduction in Trade Tariffs

	(1) Advertising	(2) Product mix	(3) Promotions	(4) Distribution
Domestic market knowledge * Post * Liberalization	.003**	.313*	.005**	.003
	(.002)	(.185)	(.002)	(.002)
Foreign market knowledge * Post * Liberalization	.003	-.055	-.007**	-.008**
	(.003)	(.304)	(.003)	(.004)
Foreign market knowledge * Liberalization	-.005*	-.121	.003	.013***
	(.003)	(.314)	(.004)	(.004)
Domestic market knowledge * Post	-.002*	-.257*	-.001	-.000
	(.001)	(.142)	(.002)	(.002)
Foreign market knowledge * Post	-.001	.012	.005**	.002
	(.002)	(.213)	(.002)	(.002)
Post * Liberalization	-.004**	-.058	.000	-.003
	(.002)	(.182)	(.002)	(.002)
Post * Trade Liberalization	.002*	.161	.002	.004**
	(.001)	(.133)	(.001)	(.002)
Post	.005*	.625**	-.004	.002
	(.003)	(.289)	(.003)	(.003)
Foreign market knowledge	.004*	.573***	.009***	.016***
	(.002)	(.220)	(.002)	(.002)
Firm size ($*10^{-5}$)	.006	164.000***	-.416**	-.015
	(.010)	(14.000)	(.192)	(.188)
Firm profitability	.006***	.061	.010***	.011***
	(.001)	(.113)	(.002)	(.002)
Domestic competition	-.001	.027	.001	-.001
	(.001)	(.148)	(.002)	(.002)
Intercept	.005**	4.227***	.020***	.017***
	(.002)	(.264)	(.003)	(.003)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
F-statistic	2.72	39.92	19.57	37.18
Prob>F	.000	.000	.000	.000
Observations	16,633	34,156	24,732	21,208
Number of firms	3,927	7,073	5,242	4,512

**** p<.01, ** p<.05, * p<.1*

Panel B – Difference-in-differences with Heterogeneous Treatment Effects – Controls for Number of Foreign Firms

	(1) Advertising	(2) Product mix	(3) Promotions	(4) Distribution
Domestic market knowledge * Post * Liberalization	.003*	.336*	.005**	.004*
	(.002)	(.185)	(.002)	(.002)
Foreign market knowledge * Post * Liberalization	.003	-.080	-.008**	-.009***
	.003)	(.303)	(.003)	(.004)
Foreign market knowledge * Liberalization	-.004	-.076	.003	.013***
	(.003)	(.314)	(.004)	(.004)
Domestic market knowledge * Post	-.002*	-.282**	-.001	-.001
	(.001)	(.142)	(.002)	(.002)
Foreign market knowledge * Post	-.001	.032	.005**	.002
	(.002)	(.212)	(.002)	(.002)
Post * Liberalization	-.003*	-.005	.001	-.000
	(.002)	(.163)	(.002)	(.002)
Post	.005*	.925***	-.003	.004
	(.003)	(.289)	(.003)	(.003)
Foreign market knowledge	.004*	.544**	.009***	.015***
	(.002)	(.220)	(.002)	(.002)
Firm size ($*10^{-5}$)	.011	165.000***	-.419**	-.004
	(.095)	(14.000)	(.192)	(.188)
Firm profitability	.006***	.072	.010***	.011***
	(.001)	(.113)	(.002)	(.002)
Domestic competition	-.000	-.070	.001	-.001
	(.001)	(.149)	(.002)	(.002)
Number of foreign firms ($*10^{-3}$)	. 133**	-37.000***	-.149	-.116
	(.066)	(6.000)	(.091)	(.096)
Intercept	.004*	4.375***	.021***	.017***
	(.002)	(0.265)	(.003)	(.003)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
F-statistic	2.75	41.39	19.62	39.96
Prob>F	.000	.000	.000	.000
Observations	16,633	34,156	24,733	21,208
Number of firms	3,927	7,073	5,243	4,512

**** p<.01, ** p<.05, * p<.1*

Table 1.6: Effect of Incumbent Firms' Marketing Mix Responses on Firm Performance during Liberalization

	Firm performance
Domestic market knowledge * Foreign competition * Advertising	-.714 (.858)
Domestic market knowledge * Foreign competition * Product mix	-.008 (.009)
Domestic market knowledge * Foreign competition * Promotions	-.617 (.611)
Domestic market knowledge * Foreign competition * Distribution	1.602* (.867)
Foreign market knowledge * Foreign competition * Advertising	1.930 (1.289)
Foreign market knowledge * Foreign competition * Product mix	-.010 (.009)
Foreign market knowledge * Foreign competition * Promotions	1.692** (.859)
Foreign market knowledge * Foreign competition * Distribution	-2.237*** (.732)
Domestic market knowledge * Foreign competition	.009 (.096)
Foreign market knowledge * Foreign competition	.099 (.084)
Domestic market knowledge * Advertising	.348 (.271)
Domestic market knowledge * Product mix	.002 (.002)
Domestic market knowledge * Promotions	-.149 (.145)
Domestic market knowledge * Distribution	-.326** (.147)
Foreign market knowledge * Advertising	-.511 (.434)
Foreign market knowledge * Product mix	.002 (.002)
Foreign market knowledge * Promotions	-.091 (.146)
Foreign market knowledge * Distribution	.047 (.096)
Foreign competition * Advertising	.190 (.695)
Foreign competition * Product mix	.004 (.008)
Foreign competition * Promotions	-.192 (.401)
Foreign competition * Distribution	-.114 (.797)
Foreign competition	-.059 (.073)
Foreign market knowledge	.057*** (.012)
Advertising	.002 (.229)
Product mix ($*10^{-2}$)	-.039 (.134)
Promotions	.174 (.114)
Distribution	.264** (.123)
Firm size ($*10^{-5}$)	.374 (1.18)
Firm profitability	.211*** (.012)
Domestic competition	.025 (.018)
Intercept	.073*** (.026)
Industry fixed effects * Post	Yes
Firm fixed effects	Yes
Year fixed effects	Yes
F-statistic	11.07
Prob>F	.000
Observations	9,927
Number of firms	2,433

**** p<.01, ** p<.05, * p<.1*

Table 1.7: Comparison of Incumbent firms' Marketing Mix Responses and Effect on Performance

	Effect on Marketing Mix Response	Effect of Marketing Mix Response on Firm Performance
Domestic Market Knowledge		
Advertising	Increase	No effect
Product mix	Increase	No effect
Promotions	Increase	No effect
Distribution	Increase	Increase
Foreign Market Knowledge		
Advertising	No change	No effect
Product mix	No change	No effect
Promotions	Decrease	Increase
Distribution	Decrease	Decrease

Table 2.1: Hypotheses Summary – Effect on Shareholder Value

	Already-compliers	First-time compliers
Resolution of Agency Concerns		
Mandated CSR Spending and Business Group Affiliation ($H_{1(AC)}$)	Positive	-
Mandated CSR Spending and Employee Stock Options ($H_{2(AC)}$)	Positive	-
Long-term Oriented Marketing Spending		
Mandated CSR Spending and Advertising ($H_{3(AC)}$/ $H_{3(FC)}$)	Positive	Positive
Mandated CSR Spending and R&D ($H_{4(AC)}$/ $H_{4(FC)}$)	Positive	Positive
Mandated CSR Spending and Distribution ($H_{5(AC)}$/ $H_{5(FC)}$)	Positive	Positive
Short-term Oriented Marketing Spending		
Mandated CSR Spending and Promotions ($H_{6(AC)}$/ $H_{6(FC)}$)	Positive	Negative

Table 2.2: Firms' Responses to the Mandate

Treated Already-compliers	2014	2015
Increased CSR	785	738
Decreased CSR	543	238
Same CSR	137	53
Treated First-time Compliers	2014	2015
Increased CSR	1,419	1,239
Same CSR	4,344	2,520

The table presents the number of already-complier firms who increased, decreased and kept their CSR spending constant in the two years following the CSR mandate, and the number of first-time complier firms increasing their CSR spending and keeping it constant in the two years following the CSR mandate.

Table 2.3: Key Constructs, Measures, and Data Sources

Construct	Measure	Data Sources
Shareholder value	Market capitalization on the Bombay stock exchange (BSE)	CMIE Prowess Database
Corporate social responsibility (CSR)	CSR / Total assets	CMIE Prowess Database
Mechanisms to resolve agency concerns		
Business group affiliation	Indicator variable – 1 if firm belongs to a business group, 0 otherwise	CMIE Prowess Database
Employee stock options	Employee stock options granted/ Total employee compensation	CMIE Prowess Database
Long-term oriented marketing spending		
Advertising	Advertising/ Total assets	CMIE Prowess Database
Research and development (R&D)	R&D/ Total assets	CMIE Prowess Database
Distribution	Distribution/ Total assets	CMIE Prowess Database
Short-term oriented marketing spending		
Promotions	Promotions/ Total assets	CMIE Prowess Database
Control variables		
Firm size	Natural logarithm of total assets	CMIE Prowess Database
Firm profitability	EBITDA/ Total assets	CMIE Prowess Database
Firm sales growth	$(Sales_t - Sales_{t-1})/Sales_{t-1}$	CMIE Prowess Database

Table 2.4: Descriptives and Correlation Matrix

Table 2.4a – Descriptives and Correlation Matrix – Already-compliers

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Shareholder value (INR Mil.)	64303.43	175116.6										
2. CSR	.001	.001	.04*									
3. Advertising	.005	.014	.10***	.10***								
4. R&D	.002	.004	.18***	.17***	.08***							
5. Promotions	.013	.023	.01	.16***	.28***	.28***						
6. Distribution	.017	.024	-.03	.06***	.28***	.11***	.25***					
7. Business group affiliation	.601	.490	.19***	.11***	-.01	.06***	-.08***	.03				
8. Employee stock options	.001	.002	.27***	-.02	.14***	.10***	.03	-.07***	.06***			
9. Firm size (Log INR Mil.)	9.366	1.79	.55***	.19***	.01	.01	-.12***	-.05**	.43***	.22***		
10. Firm profitability	.144	.085	.14***	.33***	.21***	.21***	.27***	.17***	-.14***	.02	-.19***	
11. Firm sales growth	.148	.852	.00	-.01	-.01	-.01	.00	-.04*	-.04*	.00	-.04*	.01

Table 2.4b – Descriptives and Correlation Matrix – First-time compliers

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Shareholder value (INR Mil.)	33405.81	135496										
2. CSR	.0002	.0007	.08***									
3. Advertising	.005	.014	.10***	.16***								
4. R&D	.001	.004	.10***	.15***	.14***							
5. Promotions	.009	.023	.02	.16***	.36***	.22***						
6. Distribution	.01	.021	.07***	.18***	.38***	.23***	.40***					
7. Business group affiliation	.414	.492	.20***	.06***	.04***	.11***	.08***	.17***				
8. Employee stock options	.0003	.002	.15***	.03*	.12***	.04**	.06***	.06***	.07***			
9. Firm size (Log INR Mil.)	7.583	2.849	.39***	.11***	.06***	.18***	.15***	.22***	.46***	.16***		
10. Firm profitability	.095	.112	.14***	.26***	.17***	.22***	.25***	.32***	.12***	.08***	.32***	
11. Firm sales growth	.201	1.077	-.01	-.05**	-.02	-.04**	-.03	-.04**	-.02	-.02	-.04**	-.01

*** $p<.01$, ** $p<.05$, * $p<.1$

Table 2.5: Mandated CSR Spending and Shareholder Value – Full Model

	(1)	(2)	(3)	(4)
	Already-compliers	First-time compliers	Already-compliers	First-time compliers
CSR * Business group affiliation ($*10^6$)			3.652*	1.971
			(2.076)	(1.635)
CSR * Employee stock option ($*10^9$)			1.233***	-.741*
			(.475)	(.414)
CSR * Advertising ($*10^8$)			1.835***	.822**
			(.551)	(.397)
CSR * R&D ($*10^8$)			3.869*	3.308**
			(1.976)	(1.568)
CSR * Distribution ($*10^7$)			1.815	2.772
			(4.217)	(3.221)
CSR * Promotions ($*10^7$)			3.128	-5.327**
			(2.688)	(2.341)
Control Variables				
CSR ($*10^6$)	27.29***	12.11*	.105	-.404
	(8.91)	(6.48)	(10.040)	(6.941)
Employee stock options ($*10^7$)			3.944***	.737
			(1.336)	(.801)
Advertising ($*10^6$)			-5.391	3.798
			(5.741)	(4.177)
R&D ($*10^7$)			1.277*	1.411***
			(.712)	(.422)
Distribution ($*10^6$)			2.594	3.573**
			(2.249)	(1.651)
Promotions ($*10^7$)			1.303*	.587
			(.740)	(.377)
Firm size ($*10^5$)	.145**	.111**	.120**	.124***
	(.060)	(.044)	(.061)	(.044)
Firm profitability ($*10^5$)	.511**	.614***	.305	.560***
	(.225)	(.146)	(.227)	(.146)
Firm sales growth ($*10^4$)	.511***	.034	.621***	.284
	(.174)	(.075)	(.172)	(.749)
Residuals from first stage				
CSR ($*10^6$)	-25.15***	-10.10	-4.051	-.663
	(8.97)	(.659)	(9.913)	(6.887)
Employee stock options ($*10^7$)			-3.942***	-.795
			(1.337)	(.800)
Advertising ($*10^6$)			5.313	-3.502
			(5.746)	(4.189)
R&D ($*10^7$)			-1.437**	-1.469***

Table 2.5 continued

			(.704)	(.421)
Distribution (*10^6)			-2.417	-3.390**
			(2.245)	(1.646)
Promotions (*10^7)			-1.317*	-.594
			(.739)	(.376)
Intercept (*10^6)	-.107*	-.079**	-.252***	-.234***
	(.057)	(.040)	(.090)	(.056)
Observations	2,111	2,126	2,110	2,125
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
F-statistic	19.84	10.42	9.96	8.57
Prob>F	.000	.000	.000	.000

**** p<.01, ** p<.05, * p<.1*

Table 2.6: Mandated CSR Spending and Shareholder Value - Differences-in-Differences Estimates

	Already-compliers	First-time compliers
Post * Treat * Business group affiliation ($*10^4$)	.983**	.432**
	(.445)	(.170)
Post * Treat * Employee stock options ($*10^6$)	.594*	-.030
	(.354)	(.237)
Post * Treat * Advertising ($*10^6$)	.772***	.283***
	(.232)	(.095)
Post * Treat * R&D ($*10^6$)	2.285***	.767***
	(.568)	(.247)
Post * Treat * Distribution ($*10^5$)	-.588	.617
	(.741)	(.487)
Post * Treat * Promotions ($*10^5$)	.617	.190
	(1.379)	(.438)
Post * Business group affiliation ($*10^4$)	-.230**	.253
	(.101)	(.206)
Post * Employee stock options ($*10^6$)	-.119	.027
	(.166)	(.066)
Post * Advertising ($*10^5$)	-.029	.197**
	(.831)	(.094)
Post * R&D ($*10^5$)	.026	1.091
	(.762)	(.849)
Post * Distribution ($*10^5$)	-.219	-.102***
	(.225)	(.036)
Post * Promotions ($*10^5$)	-.299	-.074**
	(.232)	(.037)
Treat * Business group affiliation ($*10^4$)	-.174	-.307***
	(.296)	(.106)
Treat * Employee stock options ($*10^6$)	-.236	.090
	(.319)	(.247)
Treat * Advertising ($*10^5$)	-.990	-.839
	(1.910)	(.586)
Treat * R&D ($*10^6$)	-1.425***	-.485**
	(.444)	(.195)
Treat * Distribution ($*10^6$)	-.108*	-.018
	(.058)	(.033)
Treat * Promotions ($*10^5$)	-.698	-.226
	(.803)	(.347)
Employee stock options ($*10^6$)	.210***	.066
	(.055)	(.082)

Table 2.6 continued

Advertising (*10^5)	.281	.331*
	(1.049)	(.199)
R&D (*10^6)	.218	-.018
	(.234)	(.076)
Distribution (*10^6)	-.121	.023*
	(.181)	(.013)
Promotions (*10^5)	-.199	.060
	(.509)	(.069)
Post (*10^4)	.778***	.260***
	(.158)	(.582)
Treat (*10^3)	-.680	.391
	(.227)	(.766)
Post * Treat (*10^4)	-.242	-.448
	(.342)	(.126)
Profit after tax/ Assets (*10^5)	.506***	.042***
	(.169)	(.010)
Sales growth (*10^4)	.144	-.001
	(.148)	(.003)
Sales (Logged) (*10^4)	.129	.061***
	(.330)	(.016)
Intercept (*10^5)	.198	.027**
	(.243)	(.011)
Observations	4,951	9,693
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
R-squared	.114	.126

*** $p<.01$, ** $p<.05$, * $p<.1$

Table 2.7: Mandated CSR Spending and Shareholder Value – Regression Discontinuity Estimates

	(1) Already-compliers	(2) First-time compliers
Treat * Business group affiliation (*10^5)	-.108	-.053
	(.173)	(.085)
Treat * Employee stock options (*10^6)	2.814***	1.900**
	(.889)	(.968)
Treat * Advertising (*10^6)	1.404***	.663***
	(.410)	(.213)
Treat * R&D (*10^6)	5.063***	2.034***
	(1.391)	(.665)
Treat * Distribution (*10^6)	-.853***	.028
	(.318)	(.143)
Treat * Promotions (*10^6)	-.138	.095
	(.402)	(.164)
Treat (*10^5)	-.270	-.103
	(.183)	(.203)
Observations	1,978	4,925
R-squared	.623	.728

Robust standard errors in parentheses, clustered at the firm level

**** p<.01, ** p<.05, * p<.1*

Table 2.8: Economic Significance of Effects

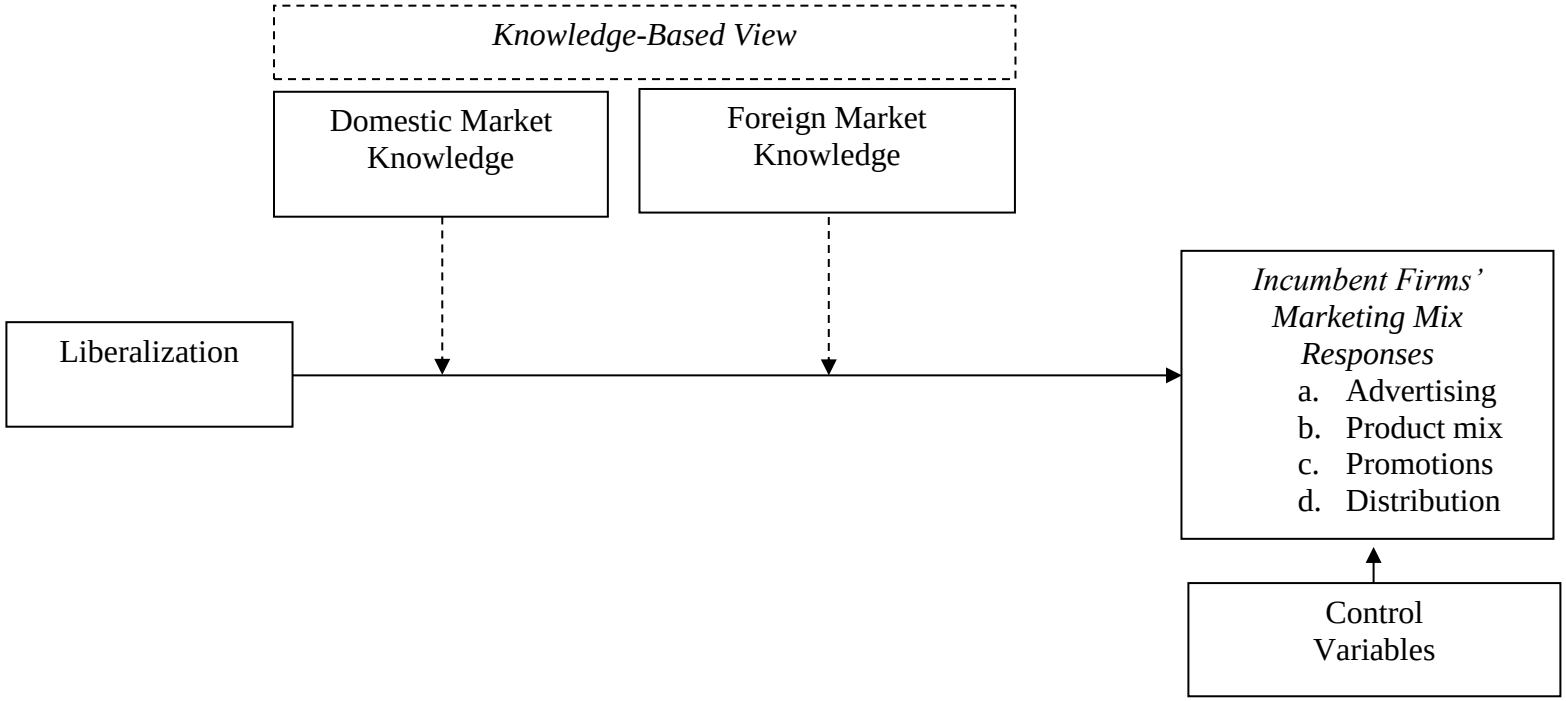
Panel A – Already-compliers

	Estimate (* 10^8)	2 SD CSR	2 SD Moderator	Total	Average Shareholder Value	Percentage
Mandated CSR and Business Group Affiliation	.004	.002	1	7304	64304	11.36%
Mandated CSR and ESOP	12.33	.002	.004	9864	64304	15.34%
Mandated CSR and Advertising	1.835	.002	.028	10276	64304	15.98%
Mandated CSR and R&D	3.869	.002	.008	6190.4	64304	9.63%

Panel B – First-time Compliers

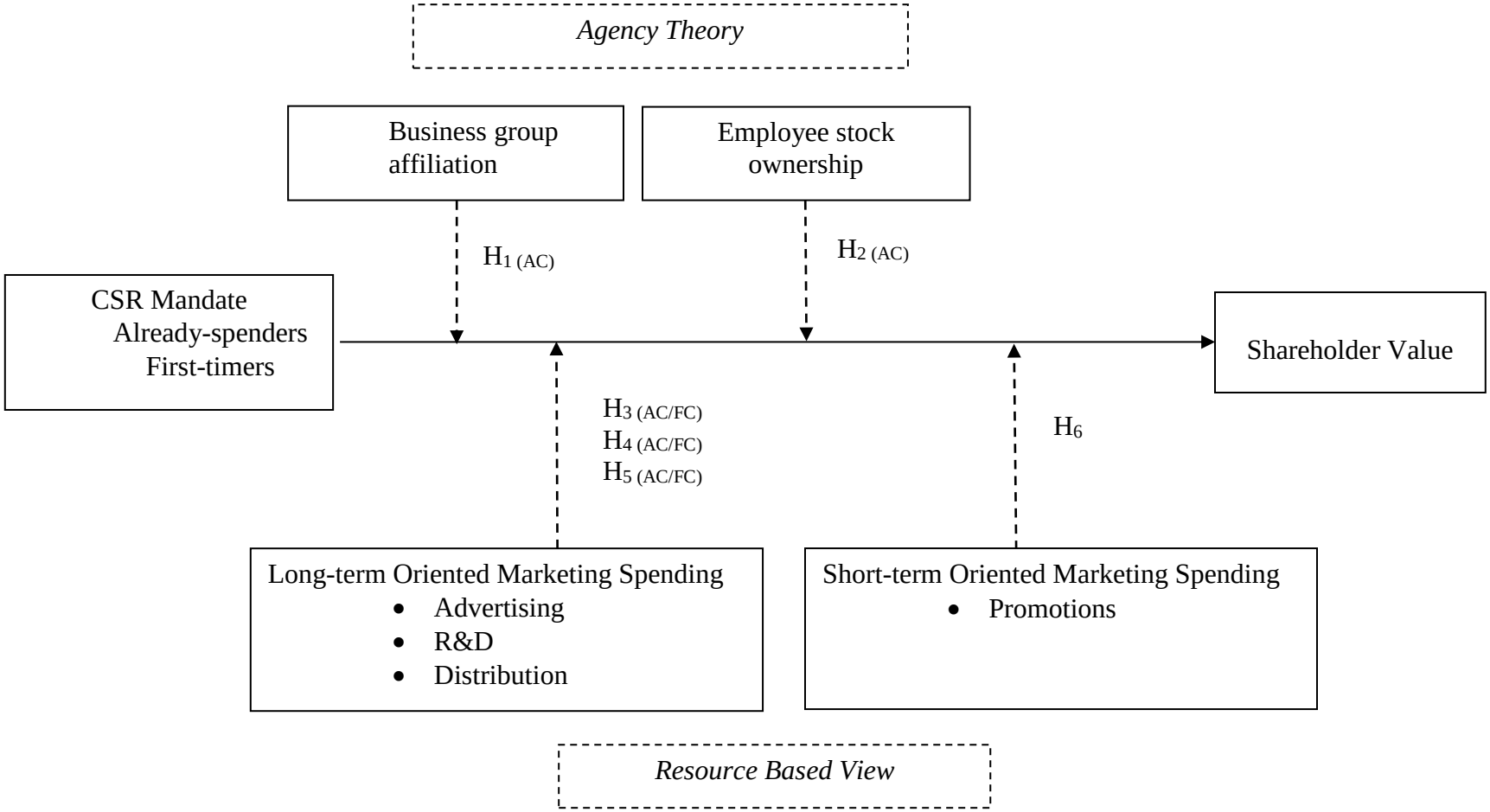
	Estimate (* 10^7)	2 SD CSR	2 SD Moderator	Total	Average Shareholder Value	Percentage
Mandated CSR and Advertising	8.22	.0014	.028	3222.24	33405.81	9.65%
Mandated CSR and R&D	33.08	.0014	.008	3704.96	33405.81	11.09%
Mandated CSR and Promotions	5.327	.0014	.046	3430.588	33405.81	10.27%

Figure 1.1: Conceptual Framework Relating Liberalization to Incumbent Firms' Marketing Mix Responses



Notes: For ease of presentation, the main effects of the various moderators on incumbent firms' marketing mix responses, which are included in the model that we estimate, are not shown in the figure.

Figure 2.1: CSR Mandates and Shareholder Value



Appendices

APPENDIX A: ORGANIZING FRAMEWORK FOR EXTANT RESEARCH

Figure A1 – Organizing Framework for Research on Competition

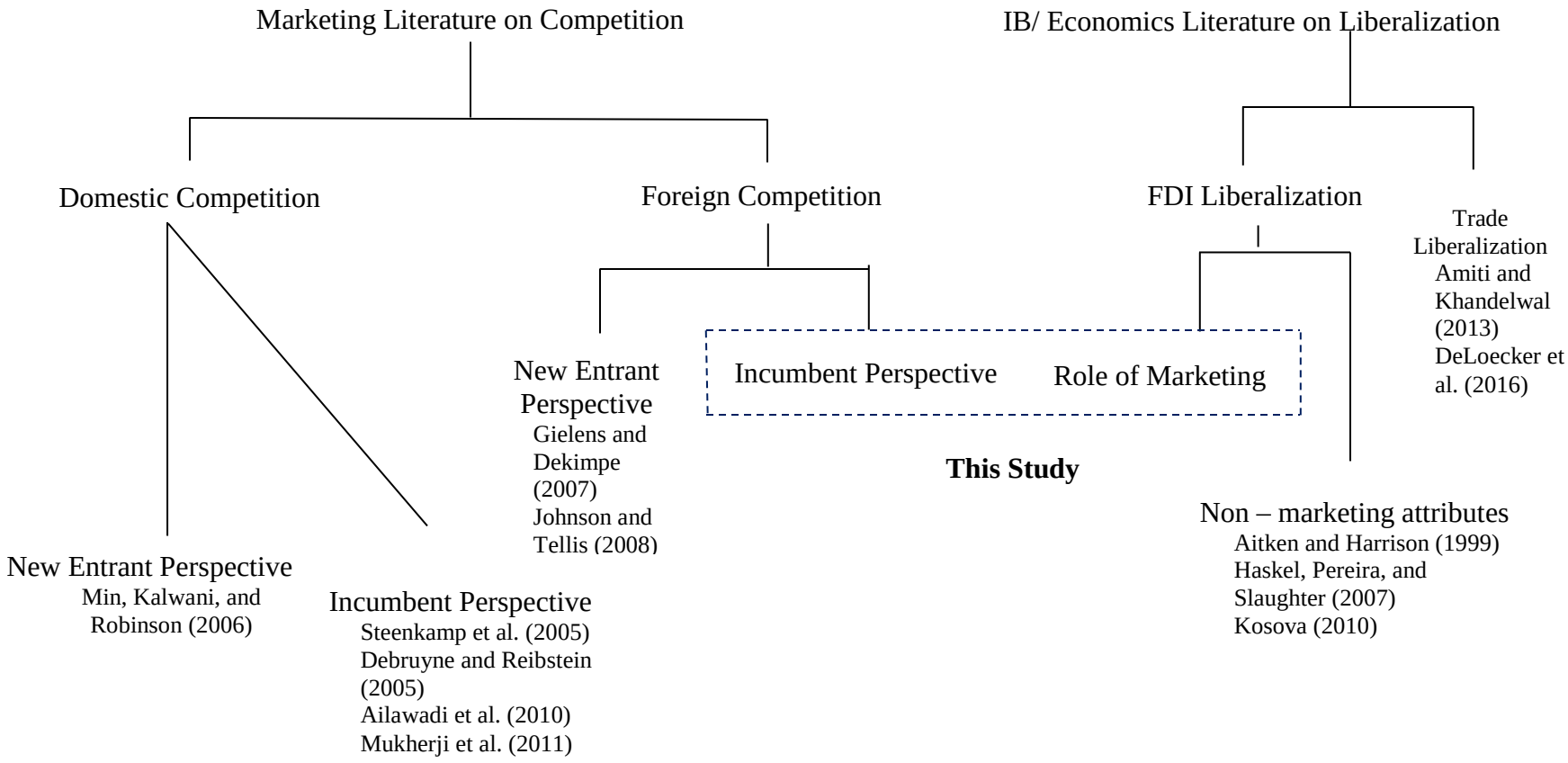


Table A1

Panel A – Summary of Extant Relevant Research on Domestic Competition in Marketing

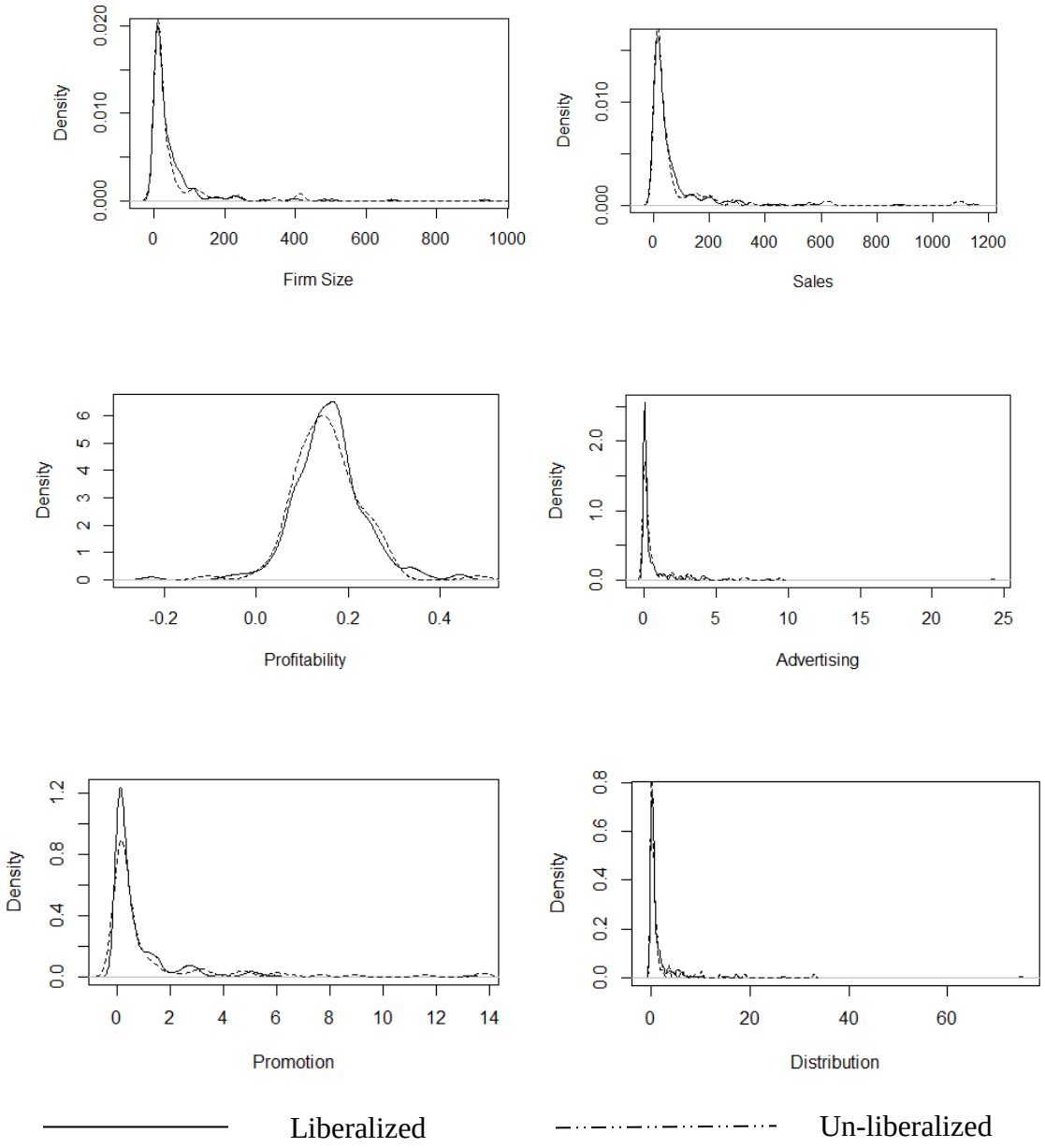
Study	Context	Key dependent variable	Marketing mix elements considered	Entrant/ Incumbent perspective	Incumbent factors affecting response/ performance	Industry
Gielens and Dekimpe (2007)	Entry into transition economies	Entry timing and size	Retailer format	Entrant	N/A	Retail
Johnson and Tellis (2008)	Entry into India and China	Success of entry	None	Entrant	N/A	All
Shankar (1999)	New product introduction	Marketing responses	Advertising and sales force spending	Incumbent	Incumbent size	U.S. prescription industry
Debruyne and Reibstein (2005)	Creation of new technology niches	Entry into new technology niches	None	Incumbent	None	Retail brokerage
Steenkamp et al. (2005)	Short-term marketing attacks	Marketing responses	Advertising and promotions	Incumbent	Market power and power asymmetry	CPG
Ailawadi et al. (2010)	Entry of Walmart	Marketing responses	Pricing, promotion, and product assortment	Incumbent	Incumbent size, profitability, growth	CPG Retail
Mukherji et al (2011)	New firm entry through acquisition	Marketing responses	Product mix	Incumbent	Incumbent size	U.S. Banking industry
Our study	FDI liberalization	Marketing responses	Advertising, product mix, promotions, distribution	Incumbent	Domestic market knowledge and foreign market knowledge	All

Panel B – Summary of Extant Relevant Research on FDI Liberalization in International Business/ Economics

Study	Key dependent variable	Marketing mix elements considered	Key factors of incumbents considered	Industry
Aitken and Harrison (1999)	Plant productivity	None	None	Manufacturing
Haskel, Perreira, and Slaughter (2007)	Plant productivity	None	None	Manufacturing
Blalock and Simon (2009)	Productivity	None	Absorptive capacity/ production capacity	Manufacturing
Ayyagari and Kosova (2010)	Domestic entry	None	Industry type	All
Kosova (2010)	Domestic firm growth and survival	None	None	All
Zhang et al. (2010)	Productivity	None	Size, technology gap	Manufacturing
Zhang et al. (2014)	Productivity	None	None	Manufacturing
Ayyagari et al (2015)	Capital investment	None	Business group affiliation	All
Our study	Marketing Responses	Advertising, product mix, promotions, distribution	Domestic market knowledge and foreign market knowledge	All

APPENDIX B: COMPARISON OF LIBERALIZED AND UN-LIBERALIZED INDUSTRIES

Figure B1 - Kernel Density Plots



Note: The figures above include the kernel density plots of key firm characteristics (i.e., firm size, sales, profitability, advertising, promotion, and distribution) across industries which were liberalized (vs. those that were not).

Table B1 - Comparison of Liberalized and Un-liberalized Industries

	Liberalized	Un-liberalized	p-value
Advertising	.014	.017	.514
Product mix	6.347	7.034	.532
Promotions	.019	.024	.279
Distribution	.023	.028	.290
Domestic market knowledge	.723	.775	.335
Foreign market knowledge	.168	.116	.295
Firm size (USD Million)	44.36	45.25	.942
Firm profitability	.134	.120	.346
Domestic competition	.775	.820	.476

Note: This table contains comparisons of average values across three digit NICs that were un-liberalized vs those that were in 1988, before liberalization

APPENDIX C: DESCRIPTIONS OF MARKETING MIX VARIABLES IN PROWESS DATA DICTIONARY

Advertising, promotions, and distribution are disparate activities and thus very different expenditure items, thus, they are reported separately.

Advertising – Advertising involves the conveying of information through paid media, is not directed to any person in specific and hence is non-direct in nature.

Promotions – Captures data on rebates and discounts as well as sales promotions.

> Rebates and discounts – Rebates and discounts are marketing tools involving reduction in the invoice amount to be paid by a customer. They are aimed at encouraging purchases by prospective customers and enhancing the likelihood of the offtake of goods produced/ services. These are essentially price-related marketing expenses incurred by a firm. A rebate is a refund granted to a buyer by a manufacturer, distributor or dealer for making purchases above a certain amount or a certain volume during a particular time frame or during the course of a contract or an agreement. Manufacturers generally give rebates to bring down the effective final price of their products. A discount, on the other hand, is an amount or percentage of reduction in selling price of a product, given on a single transaction, and not at the end of a time frame/contract. It is unconditional in nature and offered to all customers, subject to their meeting certain conditions in terms of purchase volumes, etc. It is usually fixed in nature, i.e. it is granted as a percentage of the billing amount.
>
> Sales promotions - It is a short term and direct method of garnering sales. The American Marketing Association defines sales promotions as 'those marketing activities other than personal selling advertising and publicity that stimulate consumer purchasing and dealer effectiveness, such as display shows and exhibitions, demonstrations, and various non-recurrent selling efforts not in the ordinary routine.' Sales promotions help in informing, persuading and reminding prospective and existing customers about a company and its products.

Distribution - This is the expenditure the company incurs to deliver its products to consumers or intermediaries such as distributors, wholesalers or retailers. It includes freight outward and handling charges. Loading and unloading of goods, freight expenses incurred by the company for transporting the goods from its premises to dealers or distributors are included under this item head. Sometimes, companies refer to such expenses as dispatch and forwarding expenditure. Amounts reported as breakage and shortage, loss of goods in transit, consignment expenses, etc. are included, by CMIE, under distribution expenses.

Products - For each product of the firm, the Prowess database provides the value of sales, quantity, and units.

APPENDIX D: ADDITIONAL ROBUSTNESS ANALYSIS

Table D1 – Difference-in-differences with Heterogeneous Treatment Effects – Controls for Foreign Firms' Marketing

	(1) Advertising	(2) Products	(3) Promotions	(4) Distribution
Domestic market knowledge * Post * Liberalization	.003*	.322*	.005**	.004
	(.002)	(.185)	(.002)	(.002)
Foreign market knowledge * Post * Liberalization	.003	-.065	-.008**	-.009**
	(.003)	(.304)	(.003)	(.004)
Foreign market knowledge * Liberalization	-.004	-.120	.003	.013***
	(.003)	(.314)	(.004)	(.004)
Domestic market knowledge * Post	-.002*	-.272*	-.002	-.001
	(.001)	(.142)	(.002)	(.002)
Foreign market knowledge * Post	-.001	.019	.005**	.002
	(.002)	(.213)	(.002)	(.002)
Post * Liberalization	-.003*	.033	.001	-.000
	(.002)	(.163)	(.002)	(.002)
Post	.006**	.669**	-.004	.003
	(.003)	(.288)	(.003)	(.003)
Foreign market knowledge	.004*	.573***	.009***	.015***
	(.002)	(.220)	(.002)	(.002)
Firm size ($*10^{-5}$)	.018	164.000***	-.410**	.023
	(.095)	(14.100)	(.192)	(.188)
Firm profitability	.006***	.060	.010***	.010***
	(.001)	(.113)	(.002)	(.002)
Domestic competition	-.001	.013	.000	-.001
	(.001)	(.150)	(.002)	(.002)
Foreign firms' marketing	-.004	-.517	-.014***	-.019***
	(.002)	(.423)	(.004)	(.005)
Intercept	.005**	4.283***	.021***	.018***
	(.002)	(.271)	(.003)	(.003)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
F-statistic	2.68	39.9	19.91	37.65
Prob>F	.000	.000	.000	.000
Observations	16,623	34,149	24,719	21,196
Number of firms	3,925	7,072	5,239	4,509

*** $p<.01$, ** $p<.05$, * $p<.1$

Table D2 – Difference-in-differences with Heterogeneous Treatment Effects – Controls for Industry Concentration and R&D intensity

	(1) Advertising	(2) Products	(3) Promotions	(4) Distribution
Domestic market knowledge * Post * Liberalization	.003*	.323*	.005**	.004
	(.002)	(.185)	(.002)	(.002)
Foreign market knowledge * Post * Liberalization	.003	-.081	-.008**	-.009***
	(.003)	(.303)	(.003)	(.004)
Foreign market knowledge * Liberalization	-.004	-.101	.003	.013***
	(.003)	(.314)	(.004)	(.004)
Domestic market knowledge * Post	-.002*	-.269*	-.001	-.001
	(.001)	(.142)	(.002)	(.002)
Foreign market knowledge * Post	-.001	.034	.005**	.002
	(.002)	(.212)	(.002)	(.002)
Post * Liberalization	-.003*	.040	.001	-.000
	(.002)	(.163)	(.002)	(.002)
Post	.006**	.692**	-.004	.003
	(.003)	(.286)	(.003)	(.003)
Foreign market knowledge	.003*	.555**	.010***	.015***
	(.003)	(.220)	(.002)	(.002)
Industry concentration	.001	.153	-.006*	.009**
	(.002)	(.246)	(.004)	(.004)
R&D intensity	.036	-.696	.031	.035
	(.024)	(2.998)	(.034)	(.035)
Firm size ($*10^{-5}$)	.001	164.000***	-.396**	-.003
	(.010)	(14.100)	(.192)	(.019)
Firm profitability	.006***	.061	.010***	.011***
	(.001)	(.113)	(.002)	(.002)
Domestic competition	-.001	.045	.001	-.001
	(.001)	(.148)	(.002)	(.002)
Intercept	.005**	4.180***	.021***	.015***
	(.002)	(.269)	(.003)	(.003)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
F-statistic	2.56	38.14	18.82	35.58
Prob>F	.000	.000	.000	.000
Observations	16,633	34,156	24,732	21,208
Number of firms	3,927	7,073	5,242	4,512

**** p<.01, ** p<.05, * p<.1*

Table D3 – Difference-in-differences with Heterogeneous Treatment Effects – Including Industry Fixed Effects

	(1) Advertising	(2) Products	(3) Promotions	(4) Distribution
Domestic market knowledge * Post * Liberalization	.004**	.359*	.006***	-.000
	(.002)	(.196)	(.002)	(.002)
Foreign market knowledge * Post * Liberalization	.006**	-.286	-.007*	-.004
	(.003)	(.344)	(.004)	(.004)
Foreign market knowledge * Liberalization	-.007**	.094	.002	.008**
	(.003)	(.350)	(.004)	(.004)
Domestic market knowledge * Post	-.003*	-.303**	-.003	.002
	(.002)	(.149)	(.002)	(.002)
Foreign market knowledge * Post	-.002	.029	.004	-.003
	(.002)	(.233)	(.002)	(.003)
Post * Liberalization	-.006	.394	.006	-.020*
	(.006)	(.767)	(.010)	(.011)
Post	.004	1.827***	.005	.001
	(.003)	(.366)	(.004)	(.004)
Foreign market knowledge	.004**	.546**	.011***	.020***
	(.002)	(.239)	(.003)	(.003)
Firm size ($*10^{-5}$)	.013	166.000***	-.334*	-.036
	(.096)	(14.000)	(.194)	(.189)
Firm profitability	.006***	.056	.010***	.011***
	(.001)	(.113)	(.002)	(.002)
Domestic competition	-.001	-.001	.000	-.001
	(.001)	(.150)	(.002)	(.002)
Intercept	.005**	4.135***	.020***	.018***
	(.002)	(.266)	(.003)	(.003)
Post * Industry fixed effects	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
F-statistic	1.71	12.52	5.52	10.40
Prob>F	.000	.000	.000	.000
Observations	16,633	34,156	24,732	21,208
Number of firms	3,927	7,073	5,242	4,512

*** *p<.01, ** p<.05, * p<.1*

Table D4 – Difference-in-differences with Heterogeneous Treatment Effects – Excluding Observations from 2000

	(1) Advertising	(2) Products	(3) Promotions	(4) Distribution
Domestic market knowledge * Post * Liberalization	.003	.317*	.004**	.003
	(.002)	(.187)	(.002)	(.002)
Foreign market knowledge * Post * Liberalization	.003	-.087	-.007**	-.008**
	(.003)	(.308)	(.003)	(.003)
Foreign market knowledge * Liberalization	-.003	-.045	.004	.011***
	(.003)	(.322)	(.004)	(.004)
Domestic market knowledge * Post	-.002	-.255*	-.001	.000
	(.001)	(.143)	(.002)	(.002)
Foreign market knowledge * Post	-.001	.076	.004**	.002
	(.002)	(.217)	(.002)	(.002)
Post * Liberalization	-.002	.024	.001	-.000
	(.002)	(.164)	(.002)	(.002)
Post	.005**	.737**	-.004	.003
	(.003)	(.288)	(.003)	(.003)
Foreign market knowledge	.003	.508**	.009***	.016***
	(.002)	(.226)	(.002)	(.002)
Firm size ($*10^{-5}$)	.003	159.000***	-.229	.020
	(.110)	(15.900)	(.207)	(.204)
Firm profitability	.006***	-.016	.010***	.010***
	(.001)	(.127)	(.002)	(.002)
Domestic competition	-.002	.070	.000	-.000
	(.001)	(.155)	(.002)	(.002)
Intercept	.007***	4.234***	.020***	.016***
	(.002)	(.266)	(.003)	(.003)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
F-statistic	2.54	33.83	17.96	37.14
Prob>F	.000	.000	.000	.000
Observations	14,664	29,591	21,580	18,699
Number of firms	3,640	6,610	4,840	4,221

**** p<.01, ** p<.05, * p<.1*

Table D5 – Difference-in-differences with Heterogeneous Treatment Effects – Excluding Observations from 1999 and 2000

	(1) Advertising	(2) Products	(3) Promotions	(4) Distribution
Domestic market knowledge * Post * Liberalization	.002	.275	.004*	.002
	(.002)	(.187)	(.002)	(.002)
Foreign market knowledge * Post * Liberalization	.002	-.072	-.008**	-.009**
	(.002)	(.315)	(.003)	(.003)
Foreign market knowledge * Liberalization	-.003	-.043	.004	.009**
	(.003)	(.333)	(.004)	(.004)
Domestic market knowledge * Post	-.001	-.237*	-.001	.001
	(.001)	(.143)	(.002)	(.002)
Foreign market knowledge * Post	-.000	.138	.004*	.004*
	(.002)	(.224)	(.002)	(.002)
Post * Liberalization	-.002	.044	.002	-.000
	(.001)	(.165)	(.002)	(.002)
Post	.003	.712**	-.004	.003
	(.002)	(.287)	(.003)	(.003)
Foreign market knowledge	.003	.458*	.008***	.018***
	(.002)	(.237)	(.002)	(.002)
Firm size ($*10^{-5}$)	-.025	127.000***	-.351	-.042
	(.123)	(18.300)	(.234)	(.232)
Firm profitability	.007***	-.175	.009***	.009***
	(.001)	(.142)	(.002)	(.002)
Domestic competition	-.000	-.062	.001	-.000
	(.001)	(.164)	(.002)	(.002)
Intercept	.006***	4.382***	.019***	.015***
	(.002)	(.266)	(.003)	(.003)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
F-statistic	2.92	19.75	15.17	35.38
Prob>F	.000	.000	.000	.000
Observations	12,714	25,106	18,603	16,152
Number of firms	3,420	6,078	4,472	3,909

**** p<.01, ** p<.05, * p<.1*

Table D6 – Difference-in-differences with Heterogeneous Treatment Effects – Winsorizing at 0.5%

	(1) Advertising	(2) Products	(3) Promotions	(4) Distribution
Domestic market knowledge * Post * Liberalization	.003*	.259	.004**	.004*
	(.002)	(.177)	(.002)	(.002)
Foreign market knowledge * Post * Liberalization	.003	-.072	-.008**	-.005
	(.003)	(.310)	(.003)	(.003)
Foreign market knowledge * Liberalization	-.004	-.120	.003	.010***
	(.003)	(.320)	(.004)	(.004)
Domestic market knowledge * Post	-.002*	-.209	-.001	-.000
	(.001)	(.136)	(.001)	(.002)
Foreign market knowledge * Post	-.001	.055	.004**	.002
	(.002)	(.211)	(.002)	(.002)
Post * Liberalization	-.003*	.036	.002	-.001
	(.001)	(.157)	(.002)	(.002)
Post	.004*	.766***	-.003	.003
	(.002)	(.273)	(.003)	(.003)
Foreign market knowledge	.003*	.576***	.011***	.017***
	(.002)	(.218)	(.002)	(.002)
Firm size ($*10^{-5}$)	.030	185.000***	-.432**	.013
	(.120)	(16.900)	(.212)	(.233)
Firm profitability	.007***	.067	.010***	.011***
	(.001)	(.119)	(.002)	(.002)
Domestic competition	-.000	.057	.000	-.001
	(.001)	(.143)	(.002)	(.002)
Intercept	.005**	4.065***	.019***	.016***
	(.002)	(.253)	(.003)	(.003)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
F-statistic	3.35	44.16	23.15	45.8
Prob>F	.000	.000	.000	.000
Observations	16,633	34,156	24,732	21,208
Number of firms	3,927	7,073	5,242	4,512

*** *p<.01*, ** *p<.05*, * *p<.1*

APPENDIX E: MANAGERIAL IMPLICATIONS

Table E1 – Changes in Incumbent Firm Performance

	Parameter Estimate	Two standard deviations (SD) change in marketing response	Two SD increase in FDI competition	Change in profitability	Average profitability	Percentage change in profitability
Domestic market knowledge						
Distribution	1.602	.080	.258	.033	.11	29.98%
Foreign market knowledge						
Promotions	1.692	.074	.258	.020	.11	18.38%
Distribution	2.237	.080	.258	.029	.11	26.21%

Note: The table calculates the improvements in incumbent firm profitability from a two standard deviations change in the relevant marketing response (increase or decrease) in the presence of two standard deviations increase in FDI competition and two standard deviations increase for moderators operationalized using continuous variables.

APPENDIX F: DETAILS OF SECTION 135, COMPANIES ACT

Section 135 of the Companies Act requires every firm crossing the thresholds mentioned to constitute a Corporate Social Responsibility Committee of the Board consisting of three or more directors, out of which at least one director shall be an independent director. The CSR Committee shall formulate CSR activities, recommend the amount of expenditure to be incurred on the activities formulated, and monitor the CSR policy. The Board of every company should disclose the CSR policy in its annual report, and ensure that the activities included in the CSR policy are carried out by the company.

While the Act does not indicate what activities constitute CSR spending, Schedule VII of the Companies Act, 2013 states that firms' CSR activities should relate to, (i) eradicating extreme hunger and poverty; (ii) promotion of education; (iii) promoting gender equality and empowering women; (iv) reducing child mortality and improving maternal health; (v) combating HIV, AIDS, malaria and other diseases; (vi) ensuring environmental sustainability; (vii) employment-enhancing vocational skills; (viii) social business projects; (ix) contribution to the Prime Minister's National Relief Fund or any other fund set up by the Central Government or the state governments for socioeconomic development, and relief and funds for the welfare of the scheduled castes, the scheduled tribes, other backward classes, minorities and women; and (x) such other matters as may be prescribed.

APPENDIX G: DEFINITIONS OF FIRM CSR SPENDING FROM THE PROWESS DATABASE

1. CSR Spending
    a. Donations – Donations made by companies are reported in this data field. These are not directly related to the day-to-day operations and are usually incurred for social causes. Some types of donations are – donation for a religious purpose, donation to a local authority or an institution set up for the purpose of a social cause, donation to an institution for the relief work because of destruction caused by a natural calamity, donation given to the Prime Minister's National or Drought Relief Fund, donation to a political party.
    b. Social and community – These are the expenses incurred by companies for benefit of the society or community in general. They may be in the nature of expenses on building or maintaining public parks, garden maintenance, building temples, constructing roads or contributing for social occasions.
    c. Environment and pollution control related – Companies at times describe an expense as to control or reduce pollution caused during the manufacturing process. These expenses can be for effluent disposal, environment development etc.

APPENDIX H: ADDITIONAL ROBUSTNESS ANALYSIS

Table H1 – Control Function – First Stage Regression

	(1)	(2)	(3)	(4)	(5)	(6)
	CSR	Employee stock options	Advertising	R&D	Distribution	Promotions
Industry average	.504***	.447***	.116***	.363***	.182***	.059*
	(.038)	(.100)	(.038)	(.038)	(.026)	(.036)
Intercept ($*10^{-2}$)	.021***	.037***	.445***	.108***	1.03***	1.19***
	(.002)	(.004)	(.014)	(.004)	(.025)	(.039)
Observations	11,944	11,485	11,987	11,987	11,987	11,987
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
F-statistic	177.45	5.4	2.32	25.82	9.6	8.34
Prob>F	.000	.000	.023	.000	.000	.000

*** *p<.01, ** p<.05, * p<.1*

Table H2 – Robustness Check – Dropping 5% of observations

	Already-compliers	First-time compliers
CSR * Business group affiliation ($*10^6$)	3.687*	1.402
	(2.136)	(1.801)
CSR * Employee stock options ($*10^9$)	1.474***	-.819*
	(.481)	(.433)
CSR * Advertising ($*10^8$)	1.611***	.911**
	(.563)	(.437)
CSR * R&D ($*10^8$)	3.818*	4.135**
	(2.013)	(1.824)
CSR * Distribution ($*10^7$)	1.074	2.825
	(4.328)	(3.554)
CSR * Promotions ($*10^7$)	1.595	-5.226**
	(2.758)	(2.471)
Controls		
CSR ($*10^6$)	4.288	-1.533
	(10.380)	(7.318)
Employee stock options ($*10^7$)	3.797***	.831
	(1.363)	(.863)
Advertising ($*10^6$)	-5.717	5.241
	(5.905)	(4.370)
R&D ($*10^6$)	13.860*	14.320***
	(7.371)	(4.491)
Distribution ($*10^6$)	2.357	2.888*
	(2.307)	(1.744)
Promotions ($*10^6$)	13.000*	4.993
	(7.627)	(4.070)
Firm size ($*10^5$)	.126**	.138***
	(.062)	(.047)
Firm profitability ($*10^5$)	.376	.578***
	(.236)	(.156)
Firm sales growth ($*10^4$)	.624***	.044
	(.174)	(.082)
Residuals from first stage		
CSR ($*10^6$)	-7.743	.494
	(10.230)	(7.270)
Employee stock options ($*10^7$)	-3.831***	-.898
	(1.364)	(.861)
Advertising ($*10^6$)	5.735	-4.917
	(5.912)	(4.381)
R&D ($*10^7$)	-1.510**	-1.494***
	(.729)	(.446)

Table H2 continued

Distribution (*10^6)	-2.200	-2.749
	(2.303)	(1.738)
Promotions (*10^7)	-1.305*	-.508
	(.762)	(.406)
Intercept (*10^6)	-.257***	-.235***
	(.093)	(.061)
Observations	2,004	2,006
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
F-statistic	9.25	8.15
Prob>F	.000	.000

*** *p<.01, ** p<.05, * p<.1*

Table H3 – Mandatory CSR Spending and Shareholder Value – 2 Digit Industry First Stage Controls

	Already-compliers	First-time compliers
CSR * Business group affiliation (*10^6)	4.097**	2.064
	(2.076)	(1.641)
CSR * Employee stock options (*10^8)	10.740**	-6.961*
	(4.777)	(4.208)
CSR * Advertising (*10^8)	1.624***	.681*
	(.554)	(.406)
CSR * R&D (*10^8)	4.244**	3.182**
	(1.957)	(1.578)
CSR * Distribution (*10^7)	2.157	2.846
	(4.187)	(3.239)
CSR * Promotions (*10^7)	3.852	-4.757**
	(2.660)	(2.351)
Controls		
CSR (*10^6)	7.670	1.725
	(9.428)	(6.378)
Employee stock options (*10^7)	1.944**	.601
	(.898)	(.589)
Advertising (*10^6)	-1.410	-.266
	(3.328)	(2.520)
R&D (*10^6)	7.607	14.380***
	(6.873)	(4.516)
Distribution (*10^6)	3.216*	4.965***
	(1.897)	(1.470)
Promotions (*10^6)	9.962	5.870
	(10.490)	(5.872)
Firm size (*10^5)	.134**	.125***
	(.061)	(.044)
Firm profitability (*10^5)	.322	.571***
	(.225)	(.147)
Firm sales growth (*10^4)	.612***	.031
	(.172)	(.075)
Residuals from first stage		
CSR (*10^7)	-1.188	-.275
	(.935)	(.626)
Employee stock options (*10^6)	-19.370**	-6.624
	(8.963)	(5.867)
Advertising (*10^6)	1.327	.591
	(3.320)	(2.535)
R&D (*10^6)	-9.136	-14.93***

Table H3 continued

	(6.829)	(4.505)
Distribution (*10^6)	-3.035	-4.744***
	(1.893)	(1.462)
Promotions (*10^7)	-1.011	-.596
	(1.047)	(.586)
Intercept (*10^6)	-.244**	-.234***
	(.119)	(.072)
Observations	2,102	2,116
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
F-statistic	9.61	8.45
Prob>F	.000	.000

*** *p<.01, ** p<.05, * p<.1*

Table H4 – Robustness Checks – Controls included in the First Stage

	Already-compliers	First-time compliers
CSR * Business group affiliation ($*10^6$)	3.652*	1.970
	(2.076)	(1.635)
CSR * Employee stock options ($*10^8$)	12.33***	-7.410*
	(4.748)	(4.140)
CSR * Advertising ($*10^8$)	1.835***	.822**
	(.551)	(.397)
CSR * R&D ($*10^8$)	3.869*	3.307**
	(1.976)	(1.568)
CSR * Distribution ($*10^7$)	1.815	2.773
	(4.217)	(3.221)
CSR * Promotions ($*10^7$)	3.128	-5.328**
	(2.688)	(2.341)
Controls		
CSR ($*10^6$)	.268	-.381
	(10.43)	(7.212)
Employee stock options ($*10^7$)	4.437***	.838
	(1.503)	(.901)
Advertising ($*10^6$)	-4.578	3.263
	(4.864)	(3.536)
R&D ($*10^7$)	1.385*	1.520***
	(.765)	(.453)
Distribution ($*10^6$)	3.725	5.158**
	(3.297)	(2.419)
Promotions ($*10^7$)	2.273*	1.024
	(1.284)	(.653)
Firm size ($*10^5$)	.743***	.607***
	(.247)	(.146)
Firm profitability ($*10^6$)	-.397**	-.215**
	(.185)	(.097)
Firm sales growth ($*10^4$)	.597***	.127
	(.183)	(.915)
Residuals from first stage		
CSR ($*10^6$)	-4.214	-.684
	(10.31)	(7.164)
Employee stock options ($*10^7$)	-4.434***	-.895
	(1.504)	(.901)
Advertising ($*10^6$)	4.500	-2.965
	(4.867)	(3.547)

Table H4 continued

R&D (*10^7)	-1.545**	-1.579***
	(.757)	(.452)
Distribution (*10^6)	-3.547	-4.976**
	(3.295)	(2.416)
Promotions (*10^7)	-2.287*	-1.030
	(1.284)	(.653)
Intercept (*10^6)	-.995***	-.777***
	(.358)	(.203)
Observations	2,110	2,125
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
F-statistic	9.96	8.57
Prob>F	.000	.000

*** *p<.01, ** p<.05, * p<.1*

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